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ABSTRACT

This history of the "polytechnic experiment" covers the period from the establishment of a binary British higher education policy in the mid-1960s to the passage in 1992 of the Further and Higher Education Act, which abolished the binary policy and the polytechnic sector, thus enabling the polytechnics in England and Wales to acquire the title of university and award their own degrees. During this period over 50 existing technical and other colleges were combined into 30 institutions in a nonuniversity, "public" sector in order to address the increasing need for vocational, professional, and industrial-based courses that could not be met by the universities. The polytechnics, which had more than 150,000 students by 1973, were unlike the universities; they had more undergraduate than graduate students, more part-time students, and more "sandwich" students (who alternate between jobs and courses). Chapters discuss the genesis of the polytechnic policy, present charts and data tables on student demographics, discuss the range of courses, styles of teaching, degrees awarded, faculty characteristics, funding, governance and management, and evaluates and successes and failures of the polytechnic concept. (Contains approximately 600 references.) (BF)

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*The Society for Research into Higher Education*

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# The Polytechnic Experiment

## 1965–1992

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1965–1992

John Pratt

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# Preface

The idea for this book arose from my experience at an OECD seminar in Austria in November 1991, trying to explain why it was that the British polytechnic policy had been so successful that it had been abandoned.

The British experience seemed to be of considerable interest in Austria and other countries with or developing similar policies, and after being asked many times, 'What happened to the polytechnics?' I eventually realized that there was no single source to which enquirers could go for an answer. This book is an attempt to remedy this, by offering a history of the development of the polytechnics from the inception of the policy in 1965 to their attainment of univerity titles in 1992. As I started work on the book it became clear that the debate and the development of the polytechnics had as often been based on opinion as evidence, so I have tried to include evidence and other sources so that conclusions about the effects and effectiveness of the policy can draw on these.

The book would not have been possible without the award of an Individual Grant to me by the Leverhulme Trust, and for a further grant from the Committee of Directors of Polytechnics. I have to thank the Trust not only for this but for the light touch with which the award was administered. The freedom that Leverhulme offered is a reminder of times now probably lost for ever. The Trust is to be commended for its efforts to preserve the capacity for intellectual enquiry in an instrumentalist age. The CDP, too, offered total academic freedom, and I hope they will see my analysis as a monument to a remarkable experiment in higher education.

Nor would the book have been possible without the contribution of my researcher, Ginny Eley. She worked for a pittance and produced astonishing (and depressing) quantities of data. She, perhaps wisely, eschews any claims to authorship but much in the text is developed from her material. I am grateful too to the senior figures in the polytechnics' history who agreed to be interviewed, but who I have kept anonymous.

The person who has perhaps been most generous of all is Eric Robinson. As the author of *The New Polytechnics* (Robinson, 1968), he is the best person to write an account of them now they are the 'old polytechnics' and he has allowed me access to drafts of several chapters of such a book. He commented helpfully and at length on my text. I hope that his book will come to fruition and I have no doubt it will address the key questions for the new universities as did his original book for the new polytechnics.

Writing a substantial book in the straitened circumstances of a former polytechnic in the 1990s places many demands on others. I thank my colleagues in the Centre for Institutional Studies at the University of East London for their support, forbearance and humour, and for comments on the text, and the staff elsewhere in the University who have facilitated my work. Most of all, to my partner Yvonne and her children, Joe, Kate and Timothy, I offer not only thanks but the promise that I will never do this again.

John Pratt

# 1

# Introduction

On 6 March 1992, the Queen gave the Royal Assent to the Further and Higher Education Act. The Act marked the end of an era in higher education in England and Wales, the end of what might be termed 'the polytechnic experiment'. Amongst its provisions, the Act enabled the polytechnics and other major colleges in England and Wales to acquire the title of 'university' and to award their own degrees. It permitted the abolition of the Council for National Academic Awards (CNAA) which hitherto had awarded degrees and other qualifications to students in these institutions, and it created separate funding councils for all higher education institutions in England and Wales. (The Further and Higher Education (Scotland) Act 1992 made similar provision for major colleges and central institutions in Scotland and for a Scottish funding council.)

The Acts thus abolished both the 'binary' policy that had characterized British higher education since the mid-1960s and the polytechnic sector that had constituted its distinctive component in England and Wales. Because the policy and the institutions were established with distinctive aims and, after a finite period, were subseqently terminated or succeeded by another distinct policy, it is possible to regard their existence as a major policy experiment.

The experiment can be said to have begun over a quarter of a century earlier, when on 27 April 1965, the then Secretary of State for Education and Science, Anthony Crosland, gave a speech at Woolwich. In this speech he announced the Government's proposal for a 'binary policy' in higher education in England and Wales, with two separate and distinctive sectors based on the universities and the leading technical and other public sector colleges. The speech was followed by a White Paper in 1966, setting out the Government's intention to establish 28 (later 30) polytechnics as the leading institutions of the non-university sector. The title 'polytechnic' was not itself new. It had been used by a number of existing institutions starting with the Regent Street Polytechnic at the end of the 19th century. The 'new polytechnics' were, however, to be designated by the government and to have distinctive aims and functions outlined in the White Paper.

The first of these 30 polytechnics was designated in September 1968 and

*Table 1.1* The 30 polytechnics

| *Date of designation* | *Polytechnic* | *Constituent colleges* | *College of education merger* | *University title* |
|---|---|---|---|---|
| January–April 1969 | Hatfield | 1 technical | | Hertfordshire |
| | Sheffield | 1 technical 1 art | 2 colleges | Sheffield Hallam |
| | Sunderland | 1 technical 1 art | 1 college | Sunderland |
| | Leicester | 1 technical 1 art | 1 college (most ITT ceased) | De Montfort |
| September 1969 | Bristol | 1 technical 1 commerce 1 art | 2 colleges | West of England |
| | Newcastle | 1 technical 1 commerce 1 art | 2 colleges | Northumbria |
| | Portsmouth | 1 technical 1 art | 1 college | Portsmouth |
| | Wolverhampton | 1 technical 1 art | 2 colleges + 1 technical teacher education | Wolverhampton |
| January 1970 | Kingston | 1 technical 1 art | 1 college | Kingston |
| | Manchester | 1 technical 1 commerce 1 art | 1 college + 1 other + 1 merged college later | Manchester Metropolitan |
| | Plymouth (later Polytechnic South West) | 1 technical | | Plymouth |
| | North Staffordshire | 2 technical 1 art | | North Staffordshire |
| | Leeds | 1 technical 1 art 1 commerce | 1 college (ITT ceased) | Leeds Metropolitan |
| | Lanchester (later Coventry) | 2 technical 1 art | 1 college | Coventry |
| Later 1970 | Glamorgan | 1 technical | 1 college | Glamorgan |
| | Oxford | 1 technical | 1 college | Oxford Brookes |
| | Teesside | 1 technical | 1 college | Teesside |
| | Liverpool | 1 technical 1 specialist 1 art 1 commerce | 2 colleges + 1 merged college, later 1 college | Liverpool John Moores |
| | Trent (later Nottingham) | 1 technical 1 art | 1 college | Nottingham Trent |
| | South Bank | 2 technical 2 specialist | | South Bank |
| | City of London | 2 technical 1 specialist | | London Guildhall |
| | Central London | 1 technical 1 specialist | 1 college (+ 1 FE later) | Westminster |
| | Thames | 1 technical 1 specialist | 1 college | Greenwich |
| | North East London (later East London) | 3 technical (1 included art) | | East London |
| | Brighton | 1 technical 1 art | 4 colleges | Brighton |
| | Huddersfield | 1 technical | | Huddersfield |
| 1971 | Birmingham | Advanced work in city + 1 commerce 1 art | 3 colleges | Central England |
| | North London | 2 technical | | North London |
| 1973 | Middlesex | 2 technical 1 art | 2 colleges | Middlesex |
| | Lancashire | 1 FE college | 2 colleges | Central Lancashire |

*Table 1.2* Subsequent polytechnic designations

| | | *Post-1972 amalgamations* | *Later amalgamations* | *University title* |
|---|---|---|---|---|
| 1989 | Humberside | 2 education, 1 technology, 1 art, 1 commerce, 1 nautical | 1 technical | Humberside |
| 1990 | Bournemouth | 1 education, 1 technology | ITT ceased | Bournemouth |
| 1991 | Anglia | 1 education, 1 technical | 1 arts and technology | Anglia Polytechnic |
| 1991 | West London | None | 1 CHE, 1 FE, 2 specialist | Thames Valley |

others followed steadily, with the final two in 1973. The new institutions were formed from over 50 existing technical and other colleges in 31 local authorities. Table 1.1 shows the dates of designation and summarizes the constituent colleges of these institutions. They contained (in 1973) over 150,000 students, of whom almost exactly half were studying full time and half part time.

The policy turned out to be remarkably robust, surviving changes of government, economic constraint and major policy changes elsewhere in the education system. Even before the designations in 1973, other events were already overtaking some of the polytechnics. In 1972, a White Paper announced the Government's policy for teacher education. In all, 23 polytechnics were involved in amalgamations with teacher education colleges, one with a college of education (technical) and three others ceased initial teacher training. The effect of these amalgamations is also summarized in Table 1.1.

There was continuing discussion, too, of the governance and funding of the polytechnics, leading to major policy changes in the 1980s. New funding mechanisms were created, particularly by the National Advisory Body for Local Authority Higher Education established in 1982. With the Education Reform Act 1988, the polytechnics were removed from the local authority sector.

By this time, another of the consequences of the reorganization of teacher education had its impact on the polytechnics. The reorganization had produced a new tier of 'colleges of higher education'; eventually, four of the largest colleges in this group attained polytechnic status in 1989 to 1992 (see Table 1.2). Thus by the time of the 1992 Further and Higher Education Act there were 34 polytechnics in England and Wales able to seek the title of university. (The Act also permitted some of the larger colleges of higher education to do so, though only Derby and Luton did.) The university titles they chose are shown in Tables 1.1 and 1.2.

By 1992, the 34 institutions had grown appreciably from the early days: they now contained over 450,000 students, more than two-thirds of whom were full-time (HEFCE, 1994). There was considerable diversity between them, and they differed, too, from the universities. Manchester was by far the largest polytechnic, with over 25,000 higher education students. This made it 50 per cent larger than the University of Manchester (16,000 students), the largest non-federal university in England. At the opposite end, there were over 8,800 higher education students at Bournemouth and Teesside, but in comparison with the universities, these were still medium-sized institutions; there were under 5,000 higher education students at the University of Essex, and at least 12 other universities had under 7,000 students.

There was considerable diversity between the polytechnics in students' mode of study. At Plymouth, 69 per cent were studying full-time, while at Nottingham and West London only 37 per cent were full-time students. The Polytechnic of Central London was the only one in which part-time students outnumbered full-time and sandwich students, at 55 per cent. At Bournemouth 37 per cent, and at Nottingham 36 per cent of all students were on sandwich courses, though only 5 per cent were at City, and 7 per cent at Westminster.

Polytechnics were more undergraduate institutions than the universities; at Nottingham and City 95 per cent of all enrolments were undergraduate, while Central London, with 83 per cent, had the least. The highest percentage in the universities was 79 per cent at Essex and Salford. At South Bank, 19 per cent of all students were on taught postgraduate courses, while at City only 5 per cent were, compared with City University's 41 per cent and Oxford University's 8 per cent. The three polytechnics with over 15 per cent of students enrolled on taught postgraduate programmes were in London: East London, South Bank and Westminster. The polytechnic with the largest percentage of research postgraduate students was Oxford with 2.3 per cent, while West London had only 0.1 per cent. In universities, the figures ranged from 24 per cent at Imperial College to 6 per cent at Leicester and Keele.

While several polytechnics – Bournemouth, East London, Humberside, North London, Portsmouth and Teesside – no longer had any further education (non-advanced) students, at City there were 2,100, or 18 per cent of all students. While most universities had no further education enrolments, Bristol had 37. Bournemouth Polytechnic was alone in having fewer than 1 per cent of overseas students, while East London and Oxford had 9 per cent. In the universities, Aston had the smallest percentage, 4 per cent, while LSE had by far the largest, with 42 per cent.

The balance between men and women varied between 45:55 men to women at Manchester Polytechnic and North London to 61:39 at South Bank and Teesside, though the latter were less extreme than the 69:31 at Brunel University.

Among the polytechnics there was a considerable difference in the proportion of mature students, classified as undergraduates of 21+ and postgraduates of 23+ on year of entry. Stafford, with 43 per cent, had the lowest, while South Bank and Westminster with 77 per cent had the highest. In four London polytechnics over 70 per cent of the students were mature. This contrasts strongly with the universities, where City, with 49 per cent, and London with 47 per cent were the only universities with close to half mature students; Oxford and Cambridge had less than 20 per cent.

The polytechnic policy was controversial from its inception and remained so up to its conclusion when the polytechnics became universities in 1992. There is considerable interest in the polytechnic policy and its outcomes, not only in Britain, but in other countries which have alternative institutions to universities. The British polytechnics were one national manifestation of a wider development in the 1960s and 1970s which OECD (1991) calls 'differentiation of higher education'. In many industrial countries, non-university institutions were founded or consolidated into a distinct sector with distinctive policy aims, for example, the Fachhochschulen in Germany, the Instituts Universitaires de Technologie in France. The process is still continuing in some cases. Indeed in some countries like Austria, the British polytechnics are a model for new policy developments.

Yet, despite its importance, there has been no overall record of the polytechnic experiment in England and Wales. The only major study was conducted at the beginning of the policy (Pratt and Burgess, 1974). There have of course been important studies of other related topics, for example Silver's (1990) history of the CNAA, and accounts of aspects of their operation, such as Watson *et al.* (1989), whilst many other studies have dealt with particular features of their development or peripheral topics. In preparing this book, it was clear that there was no single source to which the interested reader could refer to trace the development of the policy and the institutions. There was not even a complete set of student statistics. It became clear, too, that there is a great deal of published material on the polytechnics. Over 1,000 references were reviewed for this book, but a disappointingly small proportion of them were based on empirical work; much was polemical.

This book thus has two main functions: the first is to produce the first full history of the experiment, to be as comprehensive a record as possible of the events and of the views of those making, taking part and observing them. The aim is to compile and present the evidence that exists on the development of the polytechnics in England and Wales. The book is restricted to these countries for mainly practical reasons: the 1966 policy did not cover Scotland, although Scottish representatives were involved in the policy debate. The situation in Scotland was different in that there were already proportionately more university places than in England and less of a proliferation of small colleges (Robinson, 1995). However, the leading colleges of technology (called the 'central institutions' because of their direct funding from the Scottish Office) expanded in size and range of work to become the equivalent of the English and Welsh polytechnics. They were associate members of the Committee of Polytechnic Directors. But Scotland has its own educational and legal system and deserves separate treatment, which time did not permit. There was also a polytechnic in Northern Ireland, acquiring its title by fiat of a buccaneering Director rather than as part of government policy, and which later amalgamated with a university in the first 'transbinary' merger. This too has had to be omitted from this study.

The second aim of this book is to analyse the policy – in terms of its intentions, its outcomes and its implications for the development of higher education systems both in England and Wales and abroad. In this, it takes an approach developed by my colleagues and me at the Centre for Institutional Studies at the University of East London of treating the policy as a kind of hypothesis which can be tested (Burgess and Pratt, 1970; Pratt and Burgess, 1974; Locke *et al.*, 1985). The policy statements of the 1960s and subsequently embody implicit hypotheses of the kind: if we do this, then that will happen. It is important for future policy, and particularly for those whom the policy is meant to serve – the students and staff in the institutions as well as employers of their graduates – to know which instruments of policy are effective, and what are the unintended consequences of policy. Of course, it is always possible to formulate different hypotheses from those of the government and to examine these, to see which was more consistent with what actually happened, and thus to posit alternative explanations of events and predict different consequences.

This book is thus broadly in three parts. It starts in Chapter 2 with the intentions of the policy, variously expressed by government and other commentators. Chapters 3, 4 and 5 examine the consequences of these policies in terms of the students who studied at the polytechnics, the courses they took and the staff who taught them. Chapters 6, 7 and 8 examine the major institutional mechanisms or instruments of policy that affected these developments, in terms of academic quality assurance, funding and governance. Finally, Chapter 9 attempts to identify the lessons of the polytechnic experiment both for the future of higher education in a unified system in this country and for the many other countries maintaining or developing binary policies.

# 2

# The Polytechnic Policy

It is common but misleading to talk as if there had been a single 'polytechnic policy'. There were, in fact, two separate official policies in the mid-1960s which resulted in the establishment of the polytechnics. The first was the 'binary policy', enunciated in April 1965; the second was the 'polytechnic policy' itself, embodied in a White Paper in 1966. The polytechnic policy was the means by which the binary policy was implemented. But although these policies were obviously interrelated, the one did not entail the other. Indeed, Pratt and Burgess (1974) argued that the polytechnic policy was not necessarily the most appropriate means by which to achieve the intentions of the binary policy. Nor were government policies the only, or even the most adequate, statements of polytechnic policy. As we shall see, they were singularly slender on educational concerns, concentrating on organizational and numerical issues. The most comprehensive statement of a policy for polytechnics was in a book *The New Polytechnics* by Eric Robinson (1968). (This history draws on Robinson's book for more detailed analysis in later chapters.) As head of the largest faculty (and *de facto* deputy principal) of Enfield, one of the largest technical colleges in the 1960s, a former President of the Association of Teachers in Technical Institutions (ATTI) and an active contributor to Labour Party policy, Robinson was a major influence on the Labour government's policies for polytechnics, and it is to these that we now turn.

## The binary policy

The binary policy formed the basis of planning in higher education from 1965 until 1992, under governments of both the main parties. The strongest statement of this policy is in the speech at the (old) Woolwich Polytechnic in April 1965 by Anthony Crosland, the Secretary of State for Education, which startled the academic world. That such a radical speech was made is remarkable. The Labour government had, after all, been in power only since October 1964; Crosland had been in this office for an even shorter time. Formal responsibility for the speech and the binary policy is of course

Crosland's, and he must be given credit for its radicalism and for his grasp of the issues. Much credit is claimed by the leading civil servant in the Department of Education and Science, Mr (later Sir) Toby Weaver. Weaver had been the DES deputy secretary responsible for higher education policy since 1962. He had come to this office via local authority experience as officer responsible for technical education in Essex. He has recorded that he 'advised Ministers not to accept the major proposals of the Robbins Report', and advocated building up 30 of the larger regional colleges to become polytechnics (Weaver, 1994). Indeed, Crosland once complained that he had been rushed into creating polytechnics (Burgess, 1973).

But Weaver was far from being the only influence. The Woolwich speech owed a great deal to the policy of the ATTI (1965); Crosland had been handed a draft of its policy document by Eric Robinson on entering office in January 1965 and Crosland consulted members of the Association before the Woolwich speech. He and Sir Edward Boyle (the former Conservative minister) both quoted from the ATTI document in a parliamentary debate in February 1965 (Pratt and Burgess, 1974). The document was remarkably prescient, forecasting the growth of service industries and the expansion of humanities, social science, business and para-medical education, emphasizing the importance of mature students and proposing the amalgamation of major technical and other colleges (including teacher education). Robinson remembers Weaver attending the ATTI Annual Conference just after the Woolwich speech and his anxiety that the policy document which underpinned the speech would be ratified.

Whatever the influences, in the Woolwich speech Crosland declared the government's support for a 'dual system' of higher education. He identified 'twin traditions' which had created the present system of higher education. In the 'autonomous sector' were the universities and the colleges of advanced technology which were attaining university status. In the 'public sector' were the leading technical colleges and colleges of education. 'The government accepts this dual system as being fundamentally the right one, with each sector making its own distinct contribution to the whole' (Crosland, 1965). Crosland offered four reasons for his preference for a dual system:

1. the increasing need for vocational, professional, and industrial based courses could not be met by the universities;
2. a system based on a 'ladder' concept would lead to demoralization in the public sector;
3. it was desirable that part of higher education remained under 'social control' and responsive to society's needs;
4. Britain could not stand up to foreign competition by downgrading the non-university professional and technical sector.

The importance of providing higher education for working people and their children was emphasized in a later speech at Lancaster University (Crosland, 1967).

## *The two traditions*

Crosland was careful to assert that the binary policy was rooted in history: 'I did not invent it; it had been developing steadily since the turn of the century'. The characteristics of the two traditions to which he referred had been historically visible in the development of the two sectors. He did not expound on them in his speeches, but they have been set out at greater length elsewhere (Burgess and Pratt, 1970; Pratt and Burgess, 1974; Burgess, 1977).

These authors characterized the autonomous (university) tradition as an activity with its own values and purposes, affecting the rest of society obliquely. The other 'service' tradition explicitly expected higher education to serve individuals and society and justified it in these terms. The autonomous tradition was further characterized as aloof, academic, conservative and exclusive. In this tradition people and institutions hold themselves apart, ready if necessary to resist the demands of society or of government or students. In totalitarian countries their stand may be heroic. Because there can be no certainty about the advance of knowledge, the creations of the human mind achieve a kind of autonomy, imposing their own disciplines and creating their own problems. People devoted to developing the disciplines and solving the problems require protection from governments and social pressures, to pursue free inquiry and preserve bodies of knowledge. They emphasize the preservation, extension and dissemination of knowledge, 'for its own sake'. Academics speak of pursuing truth or excellence (Jaspers, 1965) and derive their justification from a discipline or body of knowledge. They claim to spend up to half their academic time on research (Halsey, 1992), as essential to their teaching. The tradition has tended to be educationally conservative. Science, technology and art have all had their battles for recognition as disciplines (Roderick, 1967). This conservatism was seen as deriving from the conviction that knowledge advances by imposing order where previously there was chaos.

There is an important consequence of this for students. Institutions in the autonomous tradition tend to be exclusive. If what they do is self-justifying, they can responsibly accept only those who are suitable for what they are doing. Exclusiveness, though ostensibly academic, may be effectively social (Robbins, 1963), with middle-class people over-represented in higher education, and working-class people under-represented.

By contrast the 'service tradition' can be characterized as responsive, vocational, innovative and open. Institutions in this tradition do not hold themselves apart from society: rather they aim to respond to its needs. They seek to place their knowledge at the service of society. Seeking to serve raises serious difficulties. There is the question of service to whom? Is it the student who is to be served, society as a whole, or the government? There are many different interests – which is to be paramount? Can the institution serve more than one? The autonomous tradition settles this by asserting the priority of the discipline; the service tradition by human and political arguments. Clearly different interests are not always compatible. For example, the interest of employers in education may be to see that workers do their jobs better; the interest of the employee, by contrast, may be to get a better job. Neither may be aware of what society, as interpreted by an elected government, may require or want.

The service tradition does not, on the whole, claim to pursue knowledge for its own sake. Human knowledge may advance as much through the solution of practical problems as through pure thought. 'Research' in these institutions is typically directed to some external problem, often in the form of consultancy for companies. The institutions are engaged explicitly in professional and vocational education – often described as 'mere' vocational training (Robinson, 1968). They are mainly teaching institutions, devoted to helping students toward some qualification. This requires them to be educationally innovative: they must accommodate growth, accept new kinds of students, offer them new kinds of courses, create new structures of study, pioneer new forms of governance, recruit new kinds of staff, and so on (Burgess and Pratt, 1971).

The service tradition implies that institutions have to be open; they cannot exclude students on the grounds that the latter are not properly prepared. Typically they accept 'maturity' or 'experience' as an alternative to academic qualification as an entry requirement. Their students are as a consequence diverse; they follow courses at many levels and by many different modes of study. This has important social implications: service institutions are often the route to higher qualification for classes excluded by the autonomous tradition. Robinson (1995) claims that 'understanding the polytechnics is impossible without an acknowledgement of British class structure and class prejudice'.

Although it is possible to characterize these two traditions in higher education, it is important to emphasize that they are not neatly reflected in two separate kinds of institutions. They are found in varying degrees in institutions of all kinds. The difference between them exists in most countries and is felt within all institutions. In the 1960s, however, higher education in Britain was unusual in that the existence of these two traditions had been recognized and supported by separate administrative arrangements. The universities, broadly representing the autonomous tradition, had quite different funding arrangements from other institutions. Their autonomy was and is enshrined in their individual charters. Until 1989, government funds were distributed to universities by the University Grants Committee (UGC) whose decisions about the distribution of funds were unquestioned by government. These allocations were made on a 'block grant' principle: that is, whatever arguments individual universities had made for the level of the grant, the actual grant, when it came, was not earmarked for specific purposes. The object of all this was to establish the UGC as a 'buffer' between the state and individual universities, thus preserving and enhancing their autonomy.

Institutions in the service tradition had quite different arrangements.

Technical education became a responsibility of local authorities. By the 1960s there were some 700 major institutions of 'further education': technical and other colleges provided and run by public authorities. In Britain, unlike many other countries, there was a long tradition of higher education provision in these colleges, outside the university or autonomous sector. Historically, this route had been particularly important in training engineers and as a route for young, working men; in Britain half of the professional engineers in the 1950s had 'worked their way up from the shop floor' (Robinson, 1995). However, the colleges were not protected by charters; they were administered by the same local authorities that maintained schools, under regulations made by the Secretary of State for Education and Science. Their administration encouraged a response to demand. Courses were run and attracted resources provided it could be shown that the students were enrolled or were likely to be, or that there was an expressed need from local industry or commerce.

These arrangements for control by democratic central and local government and for public accountability offered the colleges a quite different context in which to operate from that of the universities. This was perhaps most obvious when the colleges responded to demand for higher education, particularly from adults who had been denied or had missed the opportunity earlier. Local authorities were empowered to establish courses in their colleges in response to such demand, but they had to rely on the academic authority of the universities to offer degree courses. Most colleges offered external London University degree courses, which their staff had no part in designing, planning or examining.

Partly because of the frustrations that these arrangements generated, there has been a tendency for institutions established in the service tradition to seek autonomy in Britain, as elsewhere (OECD, 1973). We have called the process 'academic drift' (Pratt and Burgess, 1974). Broadly it consists of the aspiration to university status, and of institutions to take on the attributes and objectives of autonomy. Non-university colleges seek freedom from public control and from the discipline of external validation. They establish the structure of subject departments and hanker after professorships. They increase their commitment to research. They try to become as much like autonomous institutions as possible, thus eschewing innovation. They may begin to reject students they would previously have accepted and transfer elsewhere many of the courses they previously offered.

There was historical evidence of this tendency going back into the 19th century, when colleges founded to serve the educational needs of the growing industrial cities turned into the 'redbrick universities'. Academic drift became institutionalized in policy for technical education in the 1950s and 1960s. Following post-war concern about the need for technical education, the government, after much deliberation, decided to establish eight (later ten) colleges of advanced technology (CATs) in England and Wales. These were to concentrate on technological higher education, offering a new degree level award (the Diploma of Technology). The CATs rapidly shed their lower level work and resembled universities sufficiently by the early 1960s for the Robbins Committee to recommend they attain university status (Burgess and Pratt, 1970). An important factor in academic drift was the salary structure for teachers in further education, which rewarded the teaching of advanced work.

In 1965, Crosland noted this feature of higher education history as fundamental to the binary policy:

> For more than a century, colleges founded in the technical college tradition have gradually exchanged it for that of the universities. They have aspired to an increasing level of work, to a narrowing of student intake, to a rationalisation of course structure, and to a more academic course content.
>
> (Crosland, 1965)

Crosland asserted that it inevitably led to a neglect of local needs and demands and of the education of people for whom the colleges were founded. One of the purposes of the binary policy was to put an end to academic drift.

## *The Robbins Committee*

Crosland's endorsement of a binary policy was radical not just because it challenged the dominance of the universities and promoted an alternative tradition in higher education which had always been seen as academically and socially inferior. It also dealt a death blow to the Robbins Report on higher education, which had been published about 18 months earlier and whose recommendations had been accepted by the previous (Conservative) government. No sooner had the future pattern for higher education been comfortably settled, it seemed, than a new government came along and tore it up. Crosland rejected Robbins' proposals as seeking to institutionalize the past, maintaining the synonymity of higher education and university education.

In the 1950s, the need for fundamental decisions on the development of higher education was clear. There was pressure from the post-war generation of school leavers for access to higher education. Not only were their numbers increasing, but so too were social and educational aspirations. Pratt (1988) characterized this as 'the age of expansion'. There was the spectre of foreign competition and unfavourable comparison with higher education expansion in other countries. The government had already begun to respond to these pressures by creating a group of new universities before the Robbins Committee was set up, starting with Keele in 1949, followed by Sussex in 1961 and eight others in the 1960s, and by the designation of colleges of advanced technology in 1956. But the pressure continued and the Robbins Committee was established in 1961 to review the pattern of full-time higher education in Great Britain.

The Committee recommended expansion of higher education so that by 1980–81 there would be 558,000 full-time places, of which 346,000 would be in universities. (In 1962–63 there were 216,000 full-time students, of whom 118,000 were in universities.) It aimed to reduce competition for places (a fact often overlooked) so that the proportion of qualified school leavers entering the universities in 1980–81 would be roughly the same as in the mid-1950s 'when the competition for entry had not yet produced its undesirable effects'. About 3.5 per cent of the age group entered universities in the mid-1950s, representing about 75 per cent of those with university entrance qualifications. By the early 1960s, this had risen to about 4 per cent of the age group, but this represented only just over 60 per cent of those qualified. Other recommendations included granting university status to the colleges of advanced technology, making universities responsible both academically and administratively for the colleges of education and giving university status to about ten institutions emerging from the technical college sector by the end of the period.

The recommendations were far from revolutionary, for they simply gave public and academic approval to decisions already taken by the government to expand higher education. One of the functions of the Committee was that it legitimated this expansion within the academic community. At the time, there was strong concern in the universities that 'more meant worse'. A committee composed mainly of academics and supported by volumes of statistical evidence was able to convince most of this community that there was a 'pool of talent' yet to be tapped and that higher education could be expanded without diminution of its standards or compromising its purposes.

The Committee's achievement can thus be seen as basically political, and it would be churlish to deride it for this. It was probably a necessity if expansion were to be achieved. In current terminology, it was necessary to ensure the 'ownership' of expansion by those who would have to carry it out in the universities.

Yet, in practical terms, the more significant Committee was one which reported just before Robbins. This was the Anderson Committee on student grants which reported in 1960 (Anderson, 1960). This established the system of student maintenance grants which still (in a much attenuated form) exists. The Anderson Committee had recommended that all British residents with the minimum entry qualification admitted to first degree and comparable courses at universities or other public institutions should receive a maintenance grant: 'the nation should not depart from the ancient and sound traditions that young men and women go to the university to become all-round citizens . . .' It was also remarkably progressive in its views on the access of women, arguing against the view that a woman graduate's marriage meant her higher education would be 'wasted'. It did however, reinforce the distinction between advanced and non-advanced courses (the latter not generally receiving grants).

Moreover, in its achievement lay the Robbins Committee's nemesis. There were two elements to this. First, to establish the need for expansion, the Committee put forward conservative numerical projection. The system soon had to expand beyond the Committee's recommendations. It was thought that the Robbins' recommendation of a single unassailable (because minimal) projection for expansion was a shrewd success. It sold the idea to the universities. But it meant that in anything but the worst circumstances, higher education would expand faster than projected, and that the growth would have to be accommodated elsewhere than in the universities.

Second was the conservatism of the structural recommendations. The Committee was heavily biased towards the universities, both by its terms of reference and its composition. It was established to look at only full-time higher education, and so made scant reference to the 100,000 part-time students in the system (almost as many as full-time students in the universities). It assumed that these numbers would diminish. Only one member of the committee was from a local authority. The habits of thought of the members led them to assume that higher education was synonymous with university education (Pratt and Burgess, 1974). It recommended that the higher education system should be dominated by the universities, and this did not simply mean numerically. As Weaver put it later, 'The main feature of the report was that all higher education should be virtually under the aegis of the universities . . .' (Weaver, 1994). Its recommendations were a simple expression of academic drift. In recommending the translation of the CATs to university status and the perpetuation of this process for the future, the Committee simply institutionalized historical trends. Pratt and Burgess (1974) argued that this meant that Robbins was not recommending a 'unitary' system of higher education, which was the assumption of the time, but

> a 'binary' system of the most rigid kind. That [the Committee] and subsequent academic commentators have assumed that they were doing the opposite derives from their assumptions about the identity of higher education and the universities.

Robbins divided higher education into two kinds of institutions: 'the universities taking mostly full timers and the technical colleges taking mostly part timers', and confirmed this by proposals for administrative arrangements:

> For the autonomous universities there was to be a grants commission – but not for the rest. There was to be a cabinet minister responsible for the university sector – but not for the rest.
>
> (Pratt and Burgess, 1974)

Both Weaver (1994) and Pratt and Burgess (1974) characterized Robbins as viewing higher education as a kind of club; in Pratt and Burgess's version, the universities were full members, teacher training colleges were associated members (since most had or aspired to university links to validate their courses), and about ten of the technical colleges were on a 'gratifying waiting list', to be upgraded when the situation demanded and if they were judged to be up to standard. The Robbins Report was not simply numerically conservative; it was an expression of one view of higher education. The question for the government was whether this should form the basis for future development.

As we saw earlier, there were opposing views. Weaver records advising the Conservative government against action on the Robbins recommendations other than the numerical (Weaver, 1994). Government policy now became, by contrast with its evidence to the Robbins Committee, that there should be (with one exception) no new universities, that none of the leading technical colleges should be 'promoted' to university status and that the colleges of education should remain under local authority control. Weaver also claims that he promoted (again initially to the Conservative minister) the idea of building up the leading technical colleges into polytechnics to 'fill the vacuum' left after his 'disarming' the main thrust of the Robbins Report (Weaver, 1994). Certainly, within less than two years after Robbins, the new Labour government took a different view of higher education, incidentally reversing the recommendations of its Party's study group (Labour Party, 1963) to form new universities around the teacher training colleges. In the words of Weaver, the Woolwich speech 'rejected a hundred years of educational history'. The speech, announcing the binary policy, attempted to build on the tradition of the public sector. The Robbins Report was doomed.

## Polytechnic policy

For a while after the Woolwich speech, things, at least the visible activities of government, went quiet. Pratt and Burgess (1974) explain this in terms of political expediency '. . . Ministers and officials were engaged in reversing most of the Robbins Committee's recommendations – an exercise it would have been tactless to conduct in broad daylight'.

Behind the scenes, however, there was activity which led to the development of the policy for polytechnics themselves. The main activity was that undertaken by a small group of people under the chairmanship of the junior minister in the Department, Reg Prentice. It was the Prentice group which formulated the means chosen by the government to implement the binary policy. A key member of the Prentice group was Eric Robinson. Robinson had been a major force in the development of the proposals put forward by the teachers' union in the technical colleges (the Association of Teachers in Technical Institutions) for a binary policy in the early 1960s. Robinson had presented the draft of these proposals to Crosland in January 1965.

The Prentice Report was circulated as a confidential memorandum to local authorities late in 1965 (Brown, 1978). Its purpose was to 'set out proposals for the development of the existing pattern of colleges to help them make the maximum contribution to meeting the demand for higher education' (cited in Brown, 1978). It saw reducing the number of colleges involved in full-time higher education as the only way to build up a system to compete with the universities. Existing colleges might be grouped to facilitate this, and the Report envisaged about 30 'polytechnic institutes' being designated by the Secretary of State. The list of designated colleges would stand for about ten years.

In a section now usually forgotten, the Report anticipated a dual system within the public sector. It thought it unlikely that the leading specialist colleges (of art, agriculture, management and other subjects) could be merged into polytechnics, so envisaged that these would continue as separate specialized centres, though they would be expected to establish links with other broader based institutions (Brown, 1978). About 50 of these specialist centres, including art schools, were anticipated.

The Report made clear that the future of other colleges in higher education was to be bleak. Those not engaged in higher education would not be expected to do so, and it was hoped that colleges and local authorities would see that it was 'better from their own point of view as well as the wider one for them to concentrate . . . on their equally important responsibilities in other fields' (cited in Brown, 1978). Even courses of part-time higher education, though more widely spread, were expected to be contained and new courses only permitted to start if conducted in association with a major centre. The Report's overall vision for the further education system was disconcertingly prescient of the pattern created a quarter of a century later by the 1988 Education Reform Act. Its long-term aim was a system parallel to the schools and universities, by 'a move towards a situation in which there are two main groups of further education institutions, broadly though not rigidly divided into those concerned with school age and those with older students . . .' (cited in Brown, 1978).

The Prentice group's proposals, when developed into the 1966 White Paper *A Plan for Polytechnics and Other Colleges* (DES, 1966), were modified by responses from the local authorities, many of whom were concerned about the diminution of the work of colleges not likely to become polytechnics. The proposal to create 50 specialist colleges and the 'two tier' vision were quietly dropped. The future of specialist colleges was now uncertain; they were not seen as likely to be involved in the polytechnics, and the White Paper proposed a review of their futures at a later date.

The White Paper set out to address not only the problems of expanding the system of higher education outside the universities, but also attempted to maintain the historic links between non-advanced work and higher education in this sector. It proposed a '. . . further evolution of the present pattern . . . to meet increasing demand for higher education and to make the best use of resources without prejudicing the opportunities of students on less advanced courses'.

It identified the importance of two other sets of students apart from full-time or sandwich students: those seeking a qualification below degree level, and those requiring part-time courses. It believed that it was 'of the utmost importance' that the major institutions of higher education were 'comprehensive in the sense that they plan their provision of courses to meet the needs of all three kinds of students' (DES, 1966). It was the comprehensiveness of these institutions which would distinguish them from other kinds of higher education, notably in the universities. The White Paper proposed to designate major new centres of this kind of institution. They were to be called 'polytechnics'.

The White Paper announced the criteria on which polytechnics would be designated. These included the likely demand for places, the needs of industry, the availability of lodgings and other residences and the desirability of reasonably balanced provision in different fields of study across the country. In some cases a single leading college with highly qualified staff and substantial capital resources might make a polytechnic. Others would be formed by amalgamations of two or more colleges. An appendix to the White Paper initially suggested a list of over 50 institutions which could be formed into 28 polytechnics (two more polytechnics were added later). The local authorities involved were invited to put forward proposals for the formation of a polytechnic. Designation would be approved by the Secretary of State when he was satisfied that it would be able to make 'an effective long term contribution as a major centre of higher education' and that there were 'proper plans for the development of work in appropriate fields of study on . . . comprehensive lines'. The government of the polytechnic had to be on acceptable lines, and guidance was offered on this later. The White Paper said that it was 'impossible to give any exact indication of the size' that a polytechnic should reach by a particular time, but it was unlikely that 'the full educational and academic advantages' of polytechnics would be attained in institutions with fewer than about 2,000 full-time students.

Thus the polytechnic policy, far from reversing a hundred years of educational history, mirrored the experience of the immediate past decade. Then, eight (later ten) colleges of advanced technology had been designated as the leading institutions of non-university technological education. Now the White Paper suggested that some 28 designated polytechnics were to head the whole non-university sector. Pratt and Burgess (1974) concluded that the White Paper, despite the determination to reverse a hundred years of educational history and a rationale based on the technical college tradition, proposed a pattern which confirmed the principle of academic drift.

How did this happen? It is worth setting out the arguments leading to the conclusion that the designation of polytechnics was the appropriate institutional means for implementing the binary policy. The White Paper set out the numerical issues first. Despite references to the two crucial groups of students in the sector – part-timers and those on higher education below degree level – most of the paragraphs here dealt with the numbers of full-time students. It cited projections for the numbers of full-time and sandwich students in the mid-1970s, which were to be well above the Robbins' projections. But there were no projections for the other two groups, which were simply 'expected to increase, though not at the same rate'.

The case for the creation of polytechnics followed the discussion of the need for expansion, and was based on a single assertion:

> It will be possible to meet these rapidly expanding needs and at the same time to provide properly for the no less important needs of students at other levels *only if* a greater concentration of full time higher education can be secured.
>
> (DES, 1966; emphasis added)

The only support for this statement came in subsequent sentences, themselves assertions. The White Paper claimed that the effect of distributing full-time higher education 'as widely as at present' was that many departments and colleges were too small to 'sustain higher academic standards and to provide a satisfactory corporate life' and that it involved 'an uneconomical use of resources' particularly of teachers qualified to teach at the higher level.

The White Paper received a mixed response. There was criticism in particular of the potential damage it seemed likely to do to colleges not designated as polytechnics and of the uncertainty about specialist colleges (Brown, 1978). There was frustration from colleges which were not proposed for designation, for example in Hull, presaging the formation of a kind of 'second division' of aspiring institutions, which eventually came about with the emergence of colleges of higher education in the 1970s. There was opposition from teacher trainers in colleges and universities. Pratt and Burgess (1974) implictly supported these concerns, criticizing the White Paper's claims of the need to concentrate resources as simply reflecting the conventional wisdom and ignoring the binary policy. They asserted that the expansion of non-university higher education over the previous ten years had been based on the possibility that colleges could gain recognition for advanced work even if this was at first on a small scale as it had often been in the CATs and other colleges initiating programmes for the degree-equivalent Diploma in Technology. There was no evidence from cost studies on the economic or uneconomic use of resources. The aim of meeting the needs of part-time students could not be implemented by a policy for concentration: 'in the nature of the case, you cannot concentrate part time work. It has to be within easy travelling distance of the students' (Pratt and Burgess, 1974).

Their final critique was that the White Paper was 'a failure at all levels: educational, administrative and intellectual'. This notwithstanding, it was the basis of the policy for the next quarter century and it is against the aims embodied within it and the ministerial speeches that the achievement of the original policy must ultimately be tested.

## Subsequent policy

No policy is, of course, eternal. Institutions develop and new circumstances arise, and policy is amended to cope. Yet there were surprisingly few amendments to the basic binary and polytechnic policies set out in the speeches and White Paper of the mid-1960s until the late 1980s. No new polytechnics (nor universities, apart from the private university college at Buckingham) were designated for more than 20 years. As Weaver recorded, for the ten years after the Woolwich speech, 'I was able to write virtually the same speech for succeeding Secretaries of State who were all happy to accept this doctrine' (Weaver, 1994). One of the reasons for the longevity of the policy was, perversely perhaps, the lack of interest shown in it by the Prime Minister of the government that launched it; Harold Wilson's memoir (Wilson, 1971) of this time makes no mention of polytechnics.

Ministers are not eternal either. As Weaver's comments make clear, Crosland was succeeded in office by a variety of Labour ministers until the change of government in 1970. Each of these made modest, and despite Weaver's efforts, sometimes contradictory contributions to the policy. In 1968, Patrick Gordon Walker seemed to advocate the separation of full- and part-time students, emphasizing the concentration of full-time work in polytechnics. Pratt and Burgess commented that Gordon Walker's speech lacked the coherence and analysis of his predecessor's. Other ministers were anxious to prevent academic drift. Edward Short, who succeeded Walker, emphasized the need for polytechnics to maintain their mix of students 'which the comprehensive principle applied to this stage of education implies,' and that they should remain the 'tip of an educational pyramid within the further education system'. He went on, 'any kind of progression from the LEA system into a university . . . would be completely alien to the concept'. He also advocated links between universities and polytechnics. Crosland, too, kept an eye on the institutions he had created, even after he left office. In 1972 he spoke of the polytechnics dividing into three groups: those apparently moving towards the university tradition; some, more regionally based and unadventurous 'enlarged technical colleges', and the third and smallest group 'striving to express the vision which we had in 1965 and Eric Robinson has tried to define and elaborate in his book' (*The Guardian*, 10 June 1972). He thought that these should get preferential government support. Shirley Williams who spoke 'indefatigably at and on polytechnics' (Pratt and Burgess, 1974) emphasized their role as teaching institutions, as did her successor Gerald Fowler, and played an important part in securing participative governance structures for them.

The change to a Conservative government in 1970 made surprisingly little difference to the policy. Margaret Thatcher who became Secretary of State stressed the need for polytechnics to remain distinct from universities and to contribute to expansion of higher education. But there were significant developments in store in the White Paper which Thatcher produced in 1972, entitled (misleadingly) *Education: A Framework for Expansion*.

## *The 1972 White Paper*

The 1972 White Paper did not propose major changes to the polytechnic policy itself. The binary system would remain, and there would be expansion in both the university and non-university sectors. Indeed the polytechnic sector appeared to become the larger part of the system: 'The major part of the 1981 total [of 750,000 places in higher education in Great Britain] must be provided by the polytechnics'. But the White Paper also contained unpleasant news for the non-university sector. The numbers of students in colleges of education was to decline by about a third by 1981 (so much for 'a framework for expansion'). The numbers were reduced even further by Circular 7/73 and subsequent policy statements into the early 1980s to around a third of the 1972 total. This was not all. There were organizational changes that destroyed the college of education sector. The colleges were to find their own futures. Some were to close, others to diversify and combine into new colleges of higher education. Some were to merge with polytechnics or further education colleges.

This part of the White Paper had major implications for the polytechnics. First it meant that they would be affected by the perturbations in the colleges of education. As noted in Chapter 1 and Table 1.2, 23 polytechnics amalgamated with colleges, acquiring staff, students and property with their assets and liabilities. The White Paper had accepted the idea of keeping teacher education in the public sector and opened the way for CNAA validation of courses. The reorganization of the colleges of education also meant that a new sector in higher education emerged, of the colleges of higher education. None of this had been foreshadowed in the polytechnic policies, and in significant respects contradicted them. Higher education in the non-university sector was no longer to be concentrated in the polytechnics. Some 59 colleges of higher education developed (Locke *et al.*, 1985) standing alongside or, depending on your point of view, subordinate to the polytechnics. A 'second division', like it or not, was established in the public sector.

The White Paper also marked the end of a brief era in policymaking. Thatcher announced a different approach to policy from that of her Labour predecessors. She eschewed what she described as an 'architectural approach' which involved building up 'a structure which you believe is right' and obliging people to work within it. The other she described as 'organic' and it allowed 'room for adaptation and change'. The organic approach was not new; the Labour Secretary of State in the previous government had applied it to local government reorganization. Nor was it uncontroversial. One commentator remarked that 'One cannot apply Darwinian theories of selection to expensive institutions of higher education' (Hewett, in Locke *et al.*, 1985). It meant, amongst other things, that higher education was in future to be a much more competitive business. Institutions now needed to compete against each other in order to survive. It also meant that the premises upon which the polytechnic policy had been founded no longer necessarily applied. It was again remarkable that the policy lasted for so much longer.

## The competitive environment

As the polytechnics developed in the environment of increasing constraint that the 1972 White Paper had described, these competitive pressures were heightened. The government increasingly sought to effect change in the direction and management of higher education. The ideals of the 1960s that education should develop individual potential were augmented by demands for economically useful skills and industrial relevance. The 1972 White Paper expressed the view that students should be given skills and knowledge 'related more directly to the decisions which will face them in their careers'. By the early 1980s, a minister could say: 'Government, industry and higher education must work together to match the ouput of qualified personnel with industry's needs' (Waldegrave, 1982). These endeavours were at their most evident in a Green Paper published by Sir Keith Joseph, Secretary of State in 1985. This emphasized the need for change in five main ways: an increased contribution of higher education to the economy; increased stringency about the ability of entrants to benefit from higher education; raising of quality and standards; the pursuit of efficiency and value for money; and selectivity and planning in the funding of research. The Green Paper anticipated closures of some institutions and 'steady pressure for improvement over a wide front' (DES, 1985a).

Although the closures of institutions anticipated by the Green Paper did not materialize, these themes continued, with varying ferocity, in subsequent years. A White Paper in 1987 emphasized the need for higher education to serve the needs of the economy more effectively (DES, 1987a).

This climate was not, however, wholly unsuited to the polytechnics. Many of the aims of the government were, in fact, consistent with the original aims of the polytechnic policy, though expressed in rather more hostile terms than in the 1960s. The polytechnics were, after all, intended to develop a form of higher education that was relevent to national economic and industrial needs. They were used to managing in a competitive climate, insofar as they had to compete with other demands on local authority budgets, and through recruitment of students to secure funding. They were intended to achieve expansion in higher education at less cost than universities, and had committed themselves to continued growth in the early 1980s when the universities had opted for consolidation of student numbers. Thus, ministers in the 1990s were able to make speeches about the aims and successes of the polytechnics that did not differ substantially from those of the 1960s and 1970s. For example, John MacGregor, Secretary of State in 1990, spoke of the polytechnics' 'track record in meeting demand,' of their concern for 'learning of practical application' and their devising courses 'characteristically related to the needs of industry and commerce' and of 'bringing the benefits of higher education to many who would not otherwise have enjoyed them' (DES, 1990a). He saw these traditional features of the polytechnics becoming 'increasingly attractive' in the 1990s.

## The debate on management and control: Oakes and NAB

The environment of increasing constraint heralded in the 1972 White Paper led to more than ministerial speeches however. There was continuing debate about the governance and funding of the polytechnics. The details of these debates are presented later (Chapters 7 and 8). We can note that in 1977, the (Labour) government set up a working group on the management of public sector higher education under the junior minister of education, Gordon Oakes. The Oakes Report (1978) concluded that whilst the arrangements for controlling and financing the sector 'have served well in a period of rapid growth they did not constitute an entirely satisfactory system of management and control . . .' But before the government acted on its recommendations, there was a general election and Thatcher became Prime Minister with a commitment to substantially reduce public spending.

In December 1979 a major change took place when the funds for advanced higher education, which were administered through the Advanced Further Education (AFE) Pool, were 'capped'. The total spend was to be determined in advance and allocated to LEAs. Decisions previously taken at LEA level were now effectively subject to central control. At the same time, the debate on governance and control continued. The upshot of this was that in 1982 the government set up a National Advisory Body for Local Authority Higher Education (NAB) to advise on the apportionment of AFE Pool resources and the academic provision to be made by institutions. In effect it became a central funding and planning body for the non-university sector. The implications of its establishment for the polytechnics are discussed in Chapter 7.

## The Education Reform Act

Despite the establishment of NAB, the management and control of the system continued to be an issue. The polytechnics were increasingly fractious about local authority control. The local authorities felt frustrated at their lack of control over their polytechnics. In the end, the issue was taken up as part of the government's reform of the whole education system in the 1988 Education Reform Act. Whilst this dealt mainly with the school system, the 1988 Act introduced the change that led to the end of the binary policy and the acquisition of university status by the polytechnics. It was this Act that enabled the polytechnics (and some other major colleges of higher education) to become independent of local authorities as statutory corporations. It finally centralized funding of the polytechnics and the major colleges in England and Wales by the establishment of the Polytechnics and Colleges Funding Council, which allocated central government funds to the institutions. (The detailed implications of this Act are discussed in Chapters 7 and 8.) The passing of the 1988 Act meant that it was but a small step to university status for the polytechnics in 1992; the constitutional arrangements were already in place when the 1992 Act permitted the change of name and unified the funding arrangements for the whole of higher education. It is to the changes in the polytechnics in the years from the announcement of the policy in 1965 until the 1992 Act that we now turn.

# 3

# Students

As we have seen, one of the the driving forces behind the establishment of the polytechnics was the need, confirmed by the Robbins Committee, to provide more places for 18-year-olds, as their numbers grew, and to increase the age participation rate to be more comparable with other industrialized countries. Another impetus was the desire to open higher education to a wide range of students. The White Paper, *A Plan for Polytechnics and Other Colleges* (DES, 1966) indicated that the polytechnics' distinctiveness would lie in the comprehensive range and character of their work, especially their commitment to non-degree students and to part-time courses. Crosland (1967), in his speech at Lancaster University, acknowledged the tradition of providing opportunities for educational and social mobility, so that late developers, early school leavers and those with no family history of higher education could still take a full-time degree course when the time was right for them. OECD (1991) referred to these aspects of the policy as social goals, promoting 'democratization' of higher education.

The intentions raised a number of concerns. On the one hand there were already worries about the maintenance of standards at a time of expansion. Halsey and Trow (1971) found roughly a third of university academics opposed any significant growth; these worries were compounded if students were admitted to higher education without the traditional A level qualifications. On the other hand were concerns that the polytechnics would, like their predecessors, submit to the historical process of 'academic drift' and eschew the students they were supposed to recruit in pursuit of university status. Pratt and Burgess (1974), surveying the establishment of the polytechnics, concluded that 'virtually all the changes' they recorded in the pattern of student recruitment represented 'a reversal of the intentions of the Woolwich and Lancaster speeches and the 1966 White Paper'. Neave (1976) also highlighted the difference between the stated intentions and the statistical evidence of early development: 'Whilst there is reason to hope that, from a qualitative standpoint, the polytechnics are admitting socially and educationally deprived and underrepresented groups, from the quantitative point of view, the same institution seems bent upon doing precisely the opposite'.

These comments related to the formative years of the polytechnics. How well did the polytechnics fulfil their original intentions by the time they became universities? How did the composition of the student body change from that inherited from technical college origins? This chapter traces the changes in the size and nature of the student body from their formative years to 1992. It uses a variety of data sources to do this, and because of the complexity of the changes in the system and to the statistics, it is necessary to explain briefly the basis of the statistical material.

## Data sources

Given the importance of the polytechnics to the development of higher education policy in England and Wales, it is remarkable how scarce are data about them, reflecting a long-standing malaise in British policy-making. It has proved impossible to compile even a simple time series of total enrolments from the time the polytechnic policy was announced to their translation into universities after 1992. More detailed analyses are even more problematical, as the absence of data is compounded by changes in the basis of data collection. It is hard to see how governments could have monitored the development of the polytechnic policy, even if they had wanted to.

There was no government data collection in the initial years of the policy. However, Pratt and Burgess (1974) compiled data from the returns to the Department of Education and Science for the constituent colleges of the polytechnics from 1965–66 to 1968–69. Subsequently the DES published enrolment data for the polytechnics as designated. So in 1969 these figures include data only for the eight polytechnics designated; in 1970 for the 26 designated, but for all 30 polytechnics thereafter. However, in 1981, the statistics for the polytechnic in Wales were excluded from the DES data and compiled separately. These data have been added to the English figures wherever possible. Some of the tables, nevertheless, exclude Wales because the data were not available in a comparable form.

In the 1970s, the polytechnics began to amalgamate with colleges of education and their student data reflect these changes. Later, when additional polytechnics were designated after the 1988 Education Reform Act, data for these are included in the statistics from 1989 onwards. For 1989 and 1990 the statistics usually cover 32 polytechnics; for 1991 and 1992 they cover the 34 polytechnics eventually designated. Again the absence of comparable Welsh data means that sometimes the statistics relate to 31 and 33 polytechnics respectively. In making comparisons of the growth of the sector, the later designations inflate the polytechnics' achievements, so data for 1988 are mainly cited to indicate the achievements of the 30 original polytechnics.

*Table 3.1* Total student numbers in polytechnics, 1965–66 to 1992–93

| | | |
|---|---|---|
| 1965–66 | 169741 | |
| 1966–67 | 175580 | |
| 1967–68 | 171698 | |
| 1968–69 | 162378 | |
| 1969–70 | 41076 (8 Polytechnics) | |
| 1970–71 | 144068 (26) | |
| 1971–72 | 162852 (30) | |
| 1972–73 | 159292 (30) | |
| 1973–74 | 156704 (30) | |
| 1974–75 | 159109 (30) | |
| 1975–76 | 177801 (30) | |
| 1976–77 | 189828 (30) | |
| 1977–78 | 198954 (30) | |
| 1978–79 | 204188 (30) | |
| 1979–80 | 203123 (30) | |
| 1980–81 | 206335 (30) | |
| 1981–82 | 213618 (30) | |
| 1982–83 | 225448 (30) | |
| 1983–84 | 237060 (30) | |
| 1984–85 | 241674 (30) | |
| 1985–86 | 246876 (30) | |
| 1986–87 | 252132 (30) | |
| 1987–88 | 261867 (30) | |
| 1988–89 | 270945 (30) | |
| 1989–90 | 296553 (32) | |
| 1990–91 | 329846 (32) | |
| 1991–92 | 401255 (34) | 361609 (30) |
| 1992–93* | 454809 (34) | 410848 (30) |

*Sources*: 1965–68, Pratt and Burgess 1974; 1969– DES/DfE Statistics of Education (Further Education).
**Note*: 1992 figures based on enrolments.

## Student numbers

When the polytechnic policy was announced in the mid-1960s, the designated colleges already constituted a sizeable sector. There were over 170,000 students in these colleges in 1965–66 (Table 3.1). Nearly half of these were on higher education ('advanced') courses (Table 3.2) and they represented just over half the total on advanced courses in the further education sector. In terms of total numbers the putative polytechnic sector was actually larger than the university sector in England and Wales, which had about 152,000 students, though all of these were on higher education courses (Table 3.3).

So far as expansion was concerned, the polytechnics were an apparent success. Total enrolments in the polytechnic sector increased by almost 60 per cent from 1965–66 to 1988–89 and by nearly threefold to over 454,000

*Table 3.2* Students in polytechnics by level and mode of study, 1965–66 to 1991–92

| | Advanced | | | | Non-advanced | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Full-time* | *Sandwich* | *Part-time day* | *Part-time evening* | *Full-time* | *Sandwich* | *Part-time day* | *Part-time evening* | *Total* |
| 1965–66 | 21788 | 10042 | 23169 | 21921 | 11990 | 774 | 46523 | 33534 | 92821 |
| 1966–67 | 29803 | 12456 | 27502 | 25305 | 9482 | 515 | 41750 | 28767 | 80514 |
| 1967–68 | 33177 | 14919 | 29499 | 23218 | 8839 | 567 | 37836 | 23643 | 70885 |
| 1968–69 | 34393 | 17851 | 28324 | 21426 | 8999 | 468 | 31964 | 18953 | 60384 |
| 1969–70 | 8549 | 6345 | 6986 | 3038 | 2096 | 50 | 7340 | 3475 | 12961 |
| 1970–71 | 31826 | 19799 | 24062 | 15393 | 5294 | 324 | 18823 | 11296 | 65856 |
| 1971–72 | 41860 | 24673 | 28278 | 16472 | 5633 | 389 | 17755 | 10443 | 62418 |
| 1972–73 | 42819 | 25610 | 29440 | 16278 | 5650 | 514 | 14376 | 8043 | 28583 |
| 1973–74 | 46066 | 25520 | 29607 | 15303 | 4771 | 326 | 13147 | 6432 | 24676 |
| 1974–75 | 49675 | 27145 | 34034 | 15252 | 4203 | 207 | 8943 | 5184 | 18537 |
| 1975–76 | 62281 | 29816 | 37282 | 16312 | 3765 | 162 | 8771 | 4613 | 17311 |
| 1976–77 | 75114 | 32885 | 38132 | 15060 | 5127 | 256 | 11066 | 12034 | 51583 |
| 1977–78 | 76744 | 36004 | 40455 | 17045 | 5016 | 240 | 11406 | 13412 | 30077 |
| 1978–79 | 75899 | 38136 | 47684 | 14997 | 5934 | 118 | 13486 | 9742 | 29280 |
| 1979–80 | 75729 | 40284 | 45556 | 17140 | 4256 | 114 | 10023 | 11701 | 26094 |
| 1980–81 | 79228 | 41506 | 46780 | 17915 | 3695 | 128 | 8577 | 10117 | 22517 |
| 1981–82 | 87334 | 43061 | 47255 | 18478 | 4378 | 73 | 6226 | 9344 | 35591 |
| 1982–83 | 93596 | 45320 | 47461 | 17650 | 3575 | 80 | 6284 | 8875 | 33973 |
| 1983–84 | 100168 | 47918 | 48519 | 19189 | 3100 | 39 | 5976 | 9197 | 33485 |
| 1984–85 | 103183 | 49135 | 48919 | 19086 | 3044 | 99 | 5766 | 8514 | 31703 |
| 1985–86 | 105563 | 48604 | 52337 | 19395 | 2816 | 210 | 5972 | 7266 | 16264 |
| 1986–87 | 110528 | 49089 | 53201 | 18278 | 2500 | 146 | 4987 | 6668 | 25956 |
| 1987–88 | 115391 | 51059 | 57496 | 18875 | 2506 | 89 | 5750 | 6162 | 26419 |
| 1988–89 | 120630 | 53291 | 59139 | 18893 | 2513 | 121 | 5215 | 5641 | 24346 |
| 1989–90 | 123223 | 54866 | 65717 | 20547 | 3216 | 165 | 5172 | 5770 | 25265 |
| 1990–91 | 154029 | 66739 | 74388 | 22385 | 3225 | 98 | 4829 | 4608 | 22197 |
| 1991–92 | 187668 | 76592 | 87394 | 27115 | 3657 | 31 | 6034 | 5283 | 26322 |

*Source*: 1965–1968, Pratt and Burgess 1974; 1969 onwards, DES/DfE Statistics of Education.
*Notes*: 1969 includes eight polytechnics; 1970 includes 26; 1971–80 includes 30; 1981–88 includes 29 (Wales not included in the published statistics) 1989–90 includes 31; 1991 includes 33.

*Table 3.3* Growth rates of advanced students in polytechnics and other colleges and university students, 1965–66 to 1991–92

| | *Polytechnic students* | *% growth* | *% 5 year growth* | *Other colleges students* | *% growth* | *% 5 year growth* | *University students* | *% growth* | *% 5 year growth* |
|---|---|---|---|---|---|---|---|---|---|
| 1965–66 | 76920 | | | 72800 | | | 152227 | | |
| 1966–67 | 95066 | 23.6 | | 67300 | –7.6 | | 169147 | 11.1 | |
| 1967–68 | 100813 | 6.0 | | 80100 | 19.0 | | 182682 | 8.0 | |
| 1968–69 | 101994 | 1.2 | | 86000 | 7.4 | | 194326 | 6.4 | |
| 1969–70 | 24918 | –75.6 | | 172000 | 100.0 | | 203454 | 4.7 | |
| 1970–71 | 91080 | 265.5 | | 106200 | –38.3 | | 210806 | 3.6 | |
| 1971–72 | 111283 | 22.2 | 17.1 | 90000 | –15.3 | 33.7 | 216699 | 2.8 | 28.1 |
| 1972–73 | 114147 | 2.6 | | 89400 | –0.7 | | 220622 | 1.8 | |
| 1973–74 | 116496 | 2.1 | | 91800 | 2.7 | | 226049 | 2.5 | |
| 1974–75 | 126106 | 8.2 | | 95800 | 4.4 | | 231664 | 2.5 | |
| 1975–76 | 145691 | 15.5 | | 104000 | 8.6 | | 242209 | 4.6 | |
| 1976–77 | 161191 | 10.6 | 44.8 | 169400 | 62.9 | 88.2 | 252707 | 4.3 | 16.6 |
| 1977–78 | 170248 | 5.6 | | 169000 | –0.2 | | 261995 | 3.7 | |
| 1978–79 | 176716 | 3.8 | | 165500 | –2.1 | | 269910 | 3.0 | |
| 1979–80 | 178709 | 1.1 | | 155400 | –6.1 | | 275823 | 2.2 | |
| 1980–81 | 185429 | 3.8 | | 174100 | 12.0 | | 283277 | 2.7 | |
| 1981–82 | 196128 | 5.8 | 21.7 | 172300 | –1.0 | 1.7 | 284267 | 0.3 | 12.5 |
| 1982–83 | 204027 | 4.0 | | 180200 | 4.6 | | 279690 | –1.6 | |
| 1983–84 | 215794 | 5.8 | | 186800 | 3.7 | | 276559 | –1.1 | |
| 1984–85 | 220323 | 2.1 | | 189700 | 1.6 | | 275891 | –0.2 | |
| 1985–86 | 226799 | 2.9 | | 201100 | 6.0 | | 280020 | 1.5 | |
| 1986–87 | 231096 | 1.9 | 17.8 | 217200 | 8.0 | 26.1 | 284875 | 1.7 | 0.2 |
| 1987–88 | 242821 | 5.1 | | 214200 | –1.4 | | 291454 | 2.3 | |
| 1988–89 | 251953 | 3.8 | | 221000 | 3.2 | | 306024 | 5.0 | |
| 1989–90 | 264353 | 4.9 | | 230300 | 4.2 | | 323199 | 5.6 | |
| 1990–91 | 317541 | 20.1 | | 242200 | 5.2 | | 344057 | 6.5 | |
| 1991–92 | 378769 | 19.3 | 63.9 | 281000 | 16.0 | 29.4 | 376074 | 9.3 | 32.0 |

*Sources*: DOE/DfE Statistics of Education; UGC/UFC Statistics of Education; DfE Statistical Bulletins, 19/92; 17/94.

in 1992–93 (Table 3.1). But these growth rates are not as dramatic as they may seem. The universities grew at not dissimilar rates for most of the period (Figure 3.1). Some of the polytechnics' growth arose from amalgamation with colleges of education in the 1970s, and after 1988 from the addition of new institutions to the polytechnic sector. Enrolments in the original 30 polytechnics nevertheless grew to nearly 411,000 by 1992, an increase of nearly 250 per cent since 1965–66.

An objective of the polytechnic policy was to contribute to the expansion of higher education. A substantial proportion of the enrolments in the 1960s were students on non-advanced courses. These were shed by the polytechnics, reducing the overall increase in total numbers. In terms of the numbers of higher education students, the growth of enrolments is more marked (Table 3.2). In 1965–66, the constituent colleges had just under 77,000 advanced students. These numbers rose to over 101,000 by 1968–69 as the institutions achieved or advanced towards designation. By 1988, over 252,000 students (in the 29 polytechnics excluding Wales) were at this level, showing a growth of over threefold since 1965–66; by 1991, the numbers (in 33 polytechnics excluding Wales) were nearly 379,000, a growth of nearly five times.

This rise is an indicator of the success of the polytechnics in fulfilling the ambitions of the 1960s policy of expansion of advanced student numbers, particularly by comparison with the universities. Total numbers (nearly all higher education) in the universities expanded at little more than half the rate of advanced student numbers in the polytechnics over the same period (see Figure 3.2). In the universities in England and Wales, total numbers increased by just under 250 per cent to 376,00 in 1991 (Table 3.3).

In this context, it may seem churlish to cavil at the achievements of the polytechnics in expansion, but we can note the relative sluggishness of growth in the early years. The original polytechnics made a relatively modest contribution to the expansion of higher education until the 1980s, if all higher education enrolments (full- and part-time) are considered. From 1966 to 1971, overall numbers of advanced students increased by only 17 per cent, less than the 28 per cent growth of the universities and half the 34 per cent of the other colleges (Table 3.3). In the next five years, the polytechnic sector expanded more rapidly, by almost 45 per cent, much of this by absorption of some college of education students, while the universities' growth declined.

In the early 1980s, the polytechnics continued to expand much faster than the universities. All sectors expanded in the five years to 1991, though the polytechnics (assisted by additional designations) did so at nearly twice the rate of the universities. As a vehicle of expansion, then, the polytechnics were slow starters, and relied on absorption and augmentation from other colleges. This may simply reflect limitations of physical capacity, but it raises questions about the policy aim to concentrate resources in the polytechnics.

How far did the polytechnics fulfil the 1966 intentions of concentration of resources within the public sector of higher education? Figure 3.2 shows the growth of numbers of advanced students in the polytechnics and the other

*Figure 3.1* Total student numbers in polytechnics and universities, 1965–91

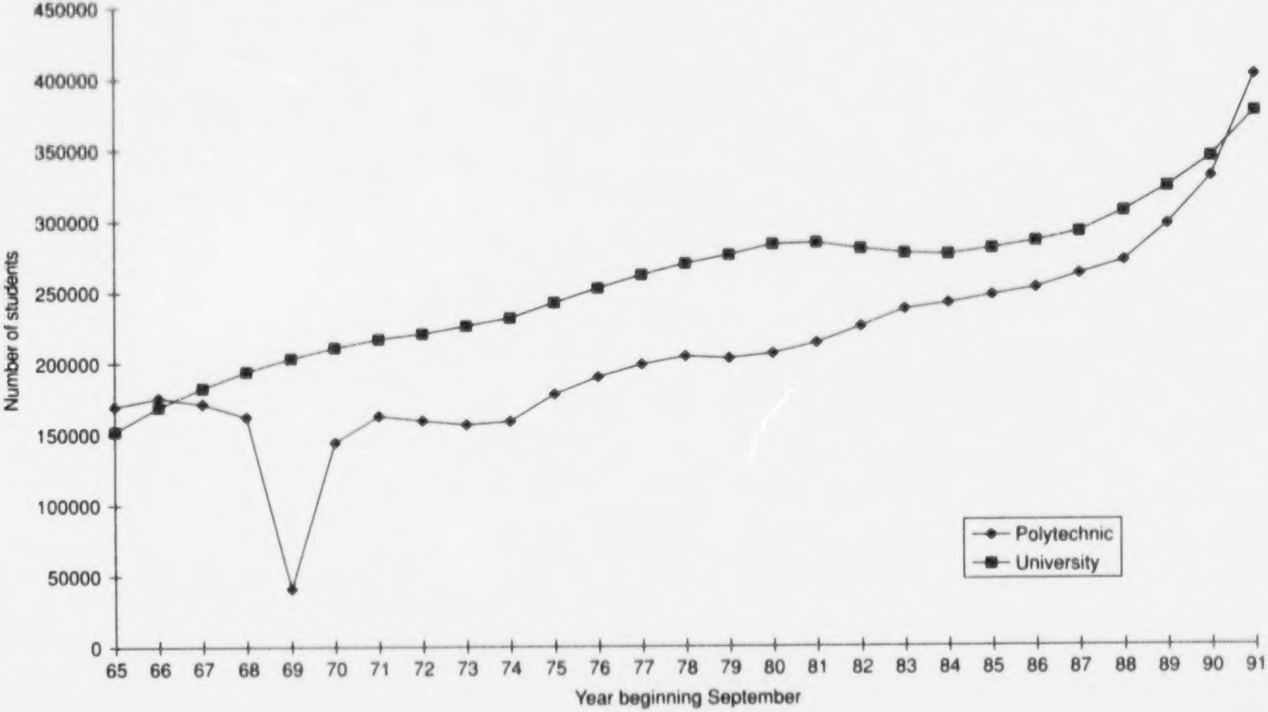


*Figure 3.2* Advanced students in universities, polytechnics and other colleges, 1965–66 to 1991–92

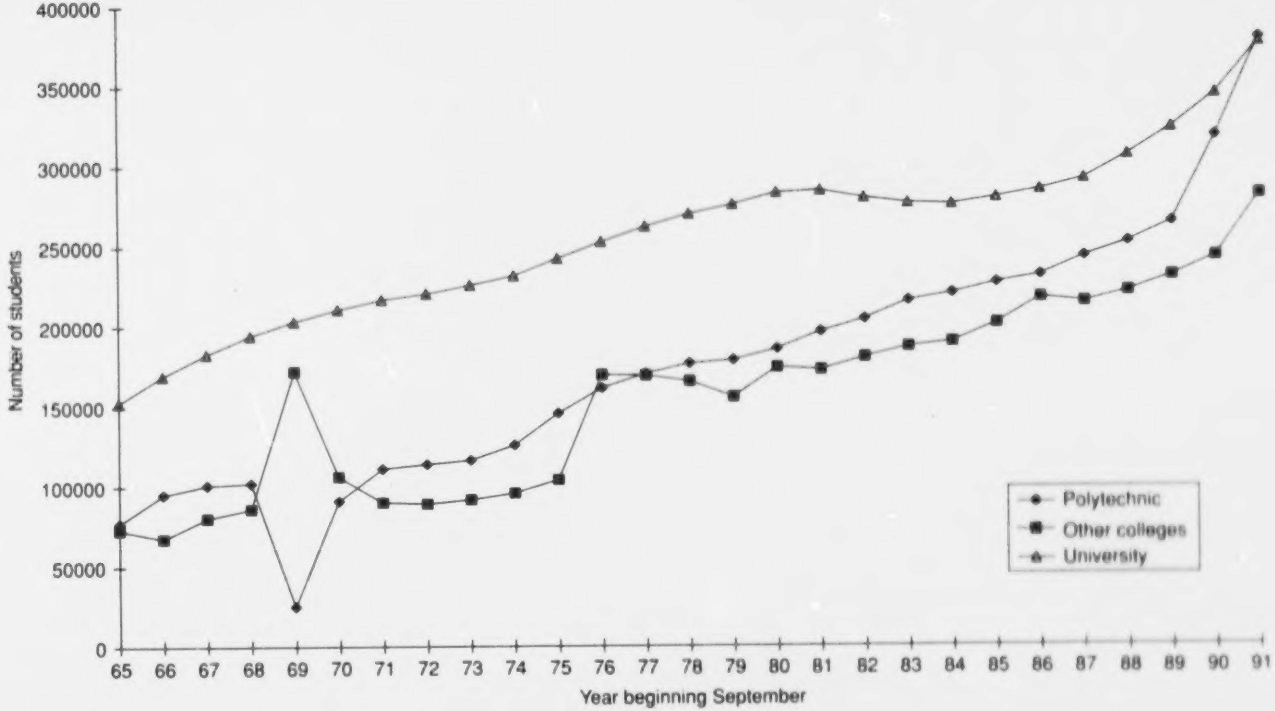


*Table 3.4* Total student numbers in polytechnics by mode of study, 1965–66 to 1991–92

| | *Total* | *Full-time* | *Part-time* | *Part-time as % of total* |
|---|---|---|---|---|
| 1965–66 | 169741 | 44594 | 125147 | 73.7 |
| 1966–67 | 175580 | 52256 | 123324 | 70.2 |
| 1967–68 | 171698 | 57502 | 114196 | 66.5 |
| 1968–69 | 162378 | 61711 | 100667 | 62.0 |
| 1969–70 | 41076 | 17395 | 23681 | 57.7 |
| 1970–71 | 144068 | 59627 | 84441 | 58.6 |
| 1971–72 | 162852 | 74891 | 87961 | 54.0 |
| 1972–73 | 159292 | 77131 | 82161 | 51.6 |
| 1973–74 | 156704 | 78647 | 78057 | 49.8 |
| 1974–75 | 159109 | 82891 | 76218 | 47.9 |
| 1975–76 | 177801 | 97900 | 79901 | 44.9 |
| 1976–77 | 189828 | 113536 | 76292 | 40.2 |
| 1977–78 | 198954 | 118004 | 80950 | 40.7 |
| 1978–79 | 204188 | 120087 | 84101 | 41.2 |
| 1979–80 | 203123 | 120383 | 82740 | 40.7 |
| 1980–81 | 206335 | 124557 | 81778 | 39.6 |
| 1981–82 | 213618 | 134846 | 78772 | 36.9 |
| 1982–83 | 225448 | 146075 | 79373 | 35.2 |
| 1983–84 | 237060 | 155065 | 81995 | 34.6 |
| 1984–85 | 241674 | 159488 | 82186 | 34.0 |
| 1985–86 | 246876 | 162295 | 84581 | 34.3 |
| 1986–87 | 252132 | 166584 | 85548 | 33.9 |
| 1987–88 | 261867 | 173465 | 88402 | 33.8 |
| 1988–89 | 270945 | 181078 | 89867 | 33.2 |
| 1989–90 | 296553 | 197946 | 98607 | 33.3 |
| 1990–91 | 329846 | 224091 | 105755 | 32.1 |
| 1991–92 | 393147 | 267948 | 125199 | 31.8 |

*Sources*: 1965–1968, Pratt and Burgess 1974; 1969 onwards, DES/DfE Statistics of Education.
*Notes*: 1969 includes eight polytechnics; 1970 includes 26; 1971–88 includes 30; 1989–90 includes 32; 1991 includes 33.

colleges within the sector. The data are complicated by the amalgamations in the 1970s, but they clearly show that the growth of the other colleges matched that of the polytechnics. The sectors diverge only after 1988 when some of the major colleges became polytechnics.

## *Full-time and sandwich students*

The most spectacular rise has been in the provision of full-time and sandwich courses. The numbers of full-time and sandwich students increased from just under 45,000 in the constituent colleges in 1965–66 to 181,000 in the

30 polytechnics – a growth of more than four times – and by 1990–91 (in 33 polytechnics excluding Wales) to 224,000 – more than six times (Table 3.4).

These figures mean that, by the time that the polytechnics became universities, they had been transformed from institutions of predominantly part-time students in the 1960s to largely full-time (Figure 3.3). In 1965–66 full-time and sandwich students accounted for only 26 per cent of total enrolments and 41 per cent of advanced students; in other words, about three-quarters of their students were part-time. The picture had already changed by the early 1970s. By 1973 full-time and sandwich students were the majority. They accounted for 67 per cent of the total student body by 1988 (68 per cent by 1992).

## *Sandwich courses*

One of the educational innovations of the public sector in higher education had been the sandwich course, pioneered notably by the colleges of advanced technology in the 1950s and 1960s (Burgess and Pratt, 1970). Its development in the polytechnics is an important indicator of the success of the polytechnic policy. In the constituent colleges in 1965–66 there were just under 11,000 students on sandwich courses (Table 3.5). Their numbers expanded steadily in the early years to over 18,000 by 1968–69, the fastest growth of any mode of study and a considerable achievement given the demands they make on colleges and industry. The subsequent years also saw continued growth in sandwich numbers. By 1988 there were 53,000 (in the 29 polytechnics excluding Wales), and by 1991 nearly 77,000 (in the 33 polytechnics excluding Wales). As a proportion of the student body (Figure 3.4), sandwich students increased from 6 per cent in 1965–66 to 20 per cent in 1988 (21 per cent of advanced work) and 19 per cent in 1991 (20 per cent of advanced work). Again, the polytechnics could claim a considerable policy success.

They could also do so by comparison with the universities. In the same period, numbers of sandwich students in universities increased modestly (Table 3.6). (The only data available here are for all UK universities initially, then for those in Great Britain.) In 1965–66 there were less than 10,000 sandwich students in UK universities, fewer than in the polytechnics in England and Wales. By 1988 there were 15,000 in Great Britain, less than a third of the polytechnics' total, and just under 18,000 by 1991. Their growth had been just over half, compared to the growth of more than sixfold in the polytechnics (Figure 3.5), and they constituted a smaller proportion of total numbers than in 1966 (Figure 3.4).

## *Part-time students*

The third key group of students that the polytechnics were to cater for was the 'tens of thousands' on part-time courses. The retention of these students

*Figure 3.3* Mode of study of polytechnic students, 1965–66, 1972–73, 1988–89

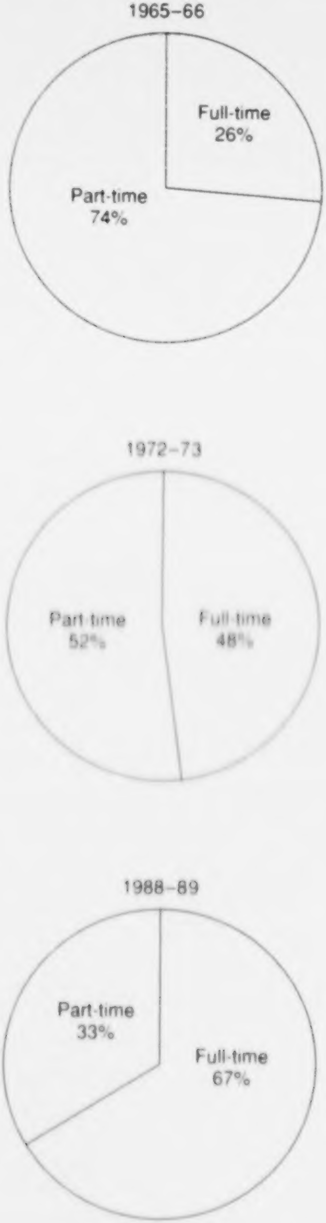


*Table 3.5* Sandwich students in polytechnics, 1965–66 to 1991–92

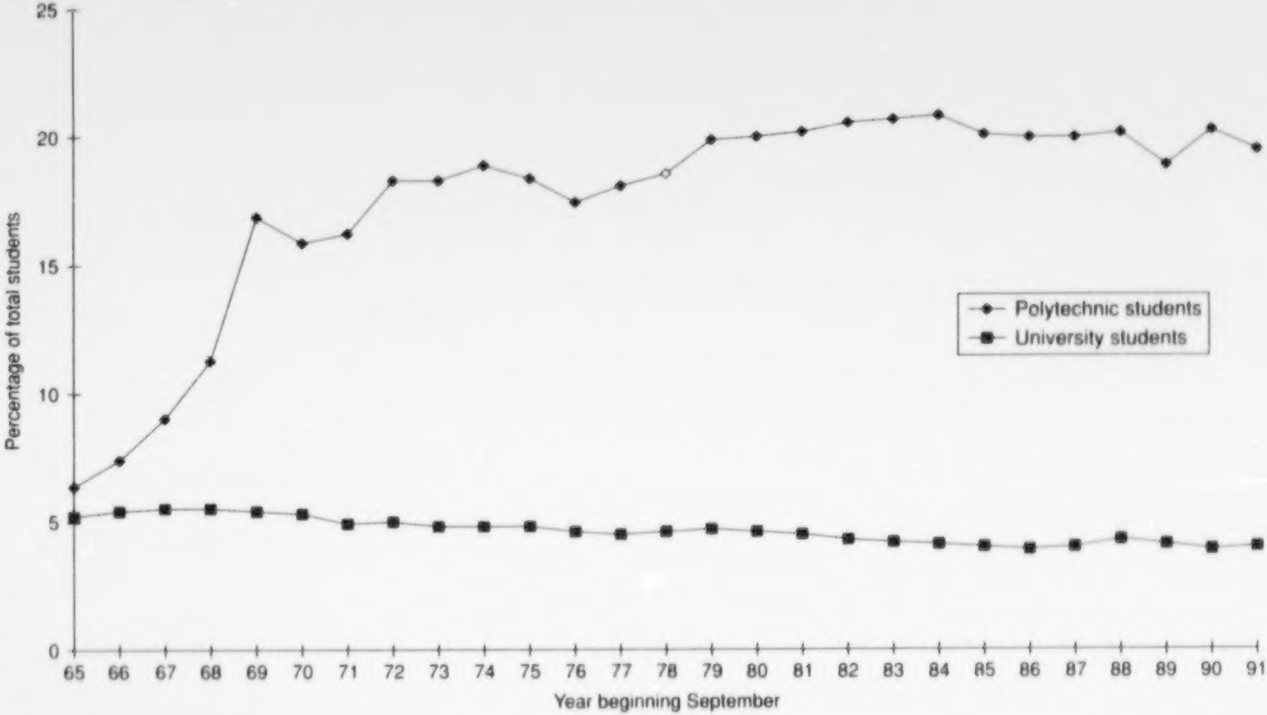
| | *Advanced sandwich* | *% of all advanced* | *Non-advanced sandwich* | *% of all non-advanced* | *Total sandwich* | *% of all students* |
|---|---|---|---|---|---|---|
| 1965–66 | 10042 | 13 | 774 | 1 | 10816 | 6 |
| 1966–67 | 12456 | 13 | 515 | 1 | 12971 | 7 |
| 1967–68 | 14919 | 15 | 567 | 1 | 15486 | 9 |
| 1968–69 | 17851 | 18 | 468 | 1 | 18319 | 11 |
| 1969–70 | 6345 | 25 | 50 | 0 | 6395 | 17 |
| 1970–71 | 19799 | 22 | 324 | 1 | 20123 | 16 |
| 1971–72 | 24673 | 22 | 389 | 1 | 25062 | 17 |
| 1972–73 | 25610 | 22 | 514 | 2 | 26124 | 18 |
| 1973–74 | 25520 | 22 | 326 | 1 | 25846 | 18 |
| 1974–75 | 27145 | 22 | 207 | 1 | 27352 | 19 |
| 1975–76 | 29816 | 20 | 162 | 1 | 29978 | 18 |
| 1976–77 | 32885 | 20 | 256 | 1 | 33141 | 17 |
| 1977–78 | 36004 | 21 | 240 | 1 | 36244 | 18 |
| 1978–79 | 38136 | 22 | 118 | 0 | 38254 | 19 |
| 1979–80 | 40284 | 23 | 114 | 0 | 40398 | 20 |
| 1980–81 | 41506 | 22 | 128 | 1 | 41634 | 20 |
| 1981–82 | 43061 | 22 | 73 | 0 | 43134 | 20 |
| 1982–83 | 45320 | 22 | 80 | 0 | 45400 | 20 |
| 1983–84 | 47918 | 22 | 39 | 0 | 47957 | 20 |
| 1984–85 | 49135 | 22 | 99 | 1 | 49234 | 21 |
| 1985–86 | 48604 | 21 | 210 | 1 | 48814 | 20 |
| 1986–87 | 49089 | 21 | 146 | 1 | 49235 | 20 |
| 1987–88 | 51059 | 21 | 89 | 1 | 51148 | 20 |
| 1988–89 | 53291 | 21 | 121 | 1 | 53412 | 20 |
| 1989–80 | 54866 | 21 | 165 | 1 | 55031 | 20 |
| 1990–91 | 66739 | 21 | 98 | 1 | 66837 | 20 |
| 1991–92 | 76592 | 20 | 31 | 0 | 76623 | 19 |

*Source*: 1965–68, Pratt and Burgess 1974; 1969 onwards, DES/DfE Statistics of Education
*Notes*: 1969 includes eight polytechnics; 1970 includes 26, 1971–80 includes 30; 1981–88 includes 29 (Wales not included in the published statistics); 1989–90 includes 31; 1991 includes 33.

was regarded by Pratt and Burgess (1974) as one of the key indicators of the success of the polytechnics in resisting academic drift, and they were critical of the performance of the polytechnics in their formative years. They recorded a decline in part-time enrolments, from 125,000 in 1965–66 to under 101,000 by 1968–69. The main loss had been of non-advanced students; part-time numbers on advanced courses in fact increased slightly to just under 50,000, though this did not stop Pratt and Burgess from referring to 'stagnation or shedding' of part-time students.

They were, however, correct in identifying a continuing trend. Part-time numbers continued to decline until the mid-1970s (Figure 3.6). The government had seen little future for part-time undergraduate education in

*Figure 3.4* Sandwich students in universities and polytechnics as a percentage of total student numbers



*Note:* Universities: UK 1965–1970, GB 1971–91.

*Table 3.6* Sandwich students in universities, 1995–66 to 1992–93

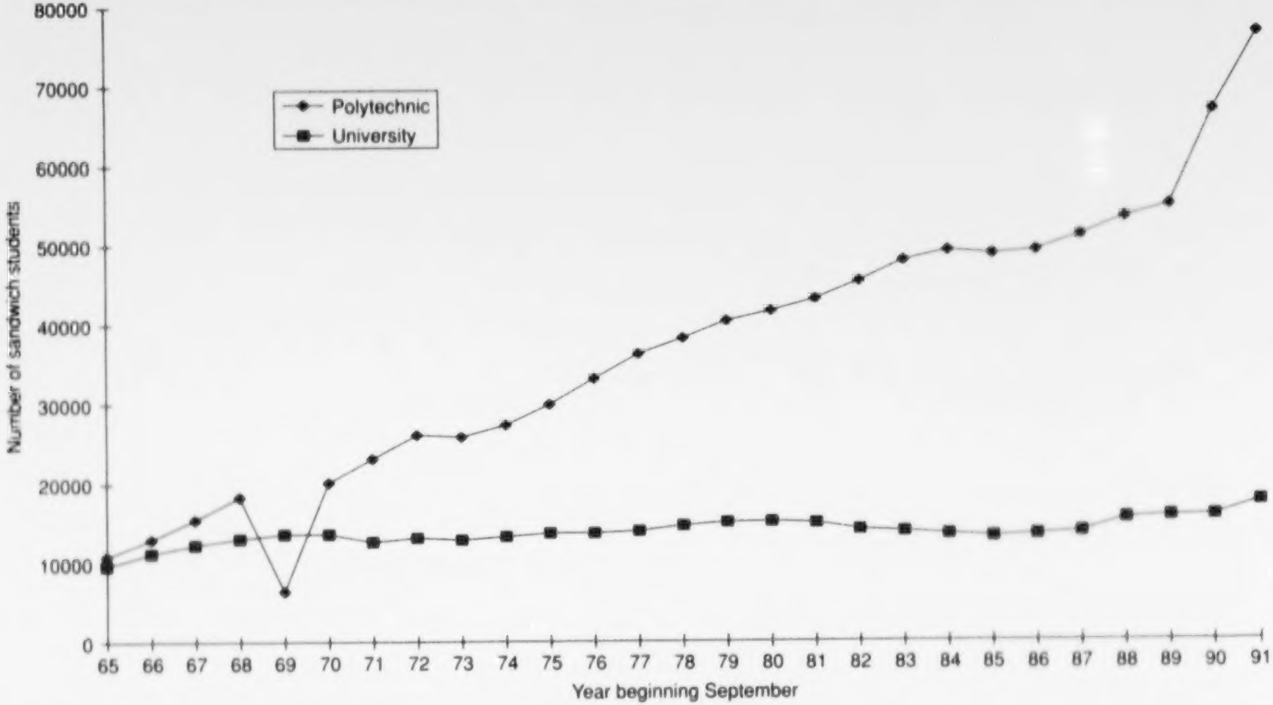
| | *UK sandwich* | *% of total* | *UK total* |
|---|---|---|---|
| 1965–66 | 9681 | 5.2 | 186413 |
| 1966–67 | 11257 | 5.4 | 206719 |
| 1967–68 | 12330 | 5.5 | 224118 |
| 1968–69 | 13082 | 5.5 | 239211 |
| 1969–70 | 13603 | 5.4 | 250680 |
| 1970–71 | 13665 | 5.3 | 258640 |
| | *GB Sandwich* | *% of total* | *GB total* |
| 1971–72 | 12641 | 4.9 | 257570 |
| 1972–73 | 13118 | 5.0 | 261992 |
| 1973–74 | 12878 | 4.8 | 267384 |
| 1974–75 | 13280 | 4.8 | 274710 |
| 1975–76 | 13737 | 4.8 | 286267 |
| 1976–77 | 13740 | 4.6 | 297783 |
| 1977–78 | 13933 | 4.5 | 307812 |
| 1978–79 | 14638 | 4.6 | 316507 |
| 1979–80 | 15060 | 4.7 | 322722 |
| 1980–81 | 15155 | 4.6 | 330619 |
| 1981–82 | 14943 | 4.5 | 333380 |
| 1982–83 | 14169 | 4.3 | 328905 |
| 1983–84 | 13858 | 4.2 | 326348 |
| 1984–85 | 13547 | 4.1 | 326597 |
| 1985–86 | 13230 | 4.0 | 332578 |
| 1986–87 | 13441 | 3.9 | 340720 |
| 1987–88 | 13773 | 4.0 | 346111 |
| 1988–89 | 15431 | 4.3 | 362118 |
| 1989–90 | 15731 | 4.1 | 382428 |
| 1990–91 | 15813 | 3.9 | 404518 |
| 1991–92 | 17541 | 4.0 | 441450 |
| 1992–93 | 19643 | 4.1 | 482250 |

*Source*: UGC/UFC Statistics of Education.

the 1960s, notwithstanding Crosland's speeches, and had not discouraged colleges (like Portsmouth) from dropping these courses. In 1971 part-time numbers had dropped to under 88,000, well below the 101,000 of 1968–69, yet this represents the peak of part-time numbers for the next 16 years. They declined to 76,000 in 1974. It was not until 1987 that numbers reached the 1971 level. By 1991, with the augmentation of the sector, numbers increased to 125,000 (excluding Wales). Even then they represented only 32 per cent of the total, a far cry from the 74 per cent of 1965–66.

These changes contrast with developments in the universities over the same period (Table 3.7). Here, part-time numbers were small, and remained so by comparison with the polytechnics. In 1965–66 there were only 11,000

*Figure 3.5* Sandwich students in universities and polytechnics, 1965–66 to 1991–92



*Note:* Universities: UK 1965–70; GB 1971–91.

*Figure 3.6* Part-time students in polytechnics, 1965–66 to 1991–92

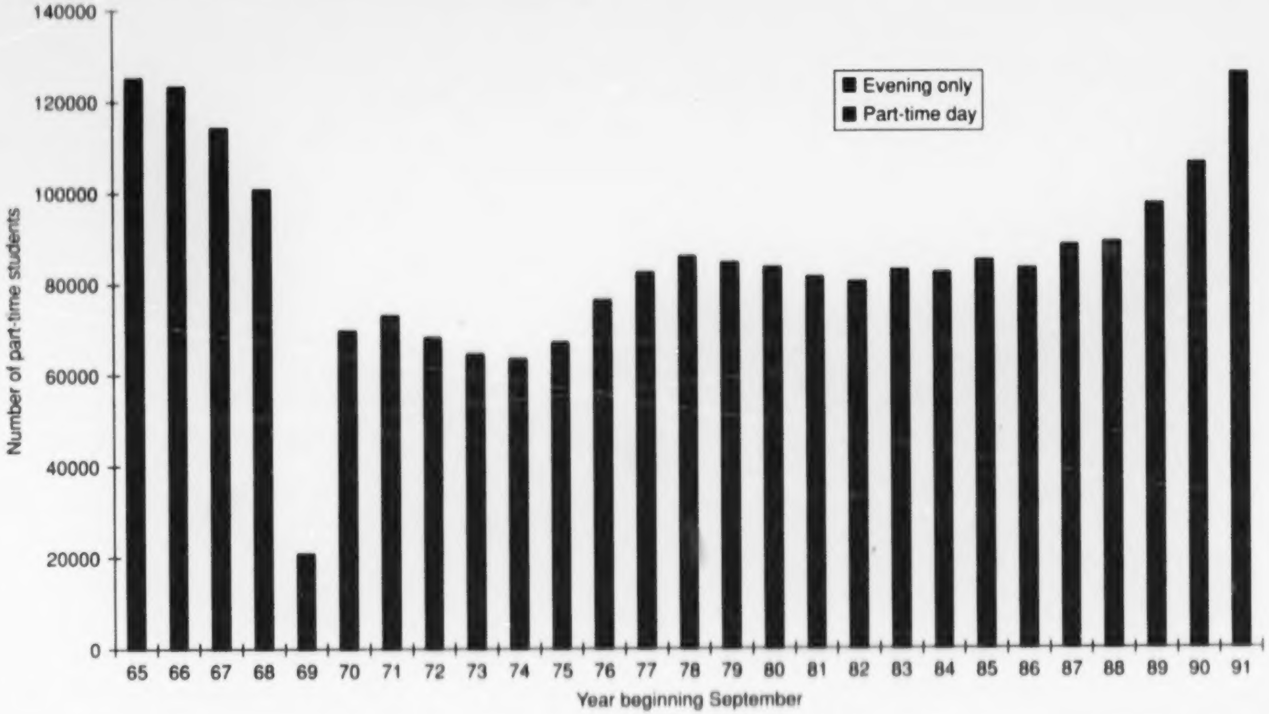


*Table 3.7* Students in universities in England and Wales by mode of study, 1965–66 to 1992–93

| | *Full-time* | *Part-time* | *Part time as % of total* | *Total* |
|---|---|---|---|---|
| 1965–66 | 141220 | 11007 | 7.2 | 152227 |
| 1966–67 | 154964 | 14183 | 8.4 | 169147 |
| 1967–68 | 168016 | 14666 | 8.0 | 182682 |
| 1968–69 | 177668 | 16658 | 8.6 | 194326 |
| 1969–70 | 184304 | 19150 | 9.4 | 203454 |
| 1970–71 | 191552 | 19254 | 9.1 | 210806 |
| 1971–72 | 197181 | 19518 | 9.0 | 216699 |
| 1972–73 | 200999 | 19623 | 8.9 | 220622 |
| 1973–74 | 205821 | 20228 | 8.9 | 226049 |
| 1974–75 | 210821 | 20843 | 9.0 | 231664 |
| 1975–76 | 220710 | 21499 | 8.9 | 242209 |
| 1976–77 | 230144 | 22563 | 8.9 | 252707 |
| 1977–78 | 238254 | 23741 | 9.1 | 261995 |
| 1978–79 | 245349 | 24561 | 9.1 | 269910 |
| 1979–80 | 249453 | 26370 | 9.6 | 275823 |
| 1980–81 | 254232 | 29045 | 10.3 | 283277 |
| 1981–82 | 255241 | 29026 | 10.2 | 284267 |
| 1982–83 | 250595 | 29095 | 10.4 | 279690 |
| 1983–84 | 246873 | 29686 | 10.7 | 276559 |
| 1984–85 | 245338 | 30553 | 11.1 | 275891 |
| 1985–86 | 249271 | 30749 | 11.0 | 280020 |
| 1986–87 | 252459 | 32416 | 11.4 | 284875 |
| 1987–88 | 257064 | 34390 | 11.8 | 291454 |
| 1988–89 | 267793 | 38231 | 12.5 | 306024 |
| 1989–90 | 281826 | 41373 | 12.8 | 323199 |
| 1990–91 | 298524 | 45533 | 13.2 | 344057 |
| 1991–92 | 323888 | 52186 | 13.9 | 376074 |
| 1992–93 | 351040 | 59650 | 14.5 * | 410690 |

*Source:* UGC/UFC Statistics of Education.

part-time students in all the universities in England and Wales (less than a tenth of the number in polytechnics). But numbers increased steadily to nearly 60,000 by 1992–93, a growth of more than five-fold. But the universities still had less than half the number of part-time students that the polytechnics had, and they constituted only 14.5 per cent of their total enrolments, less than half the percentage in polytechnics.

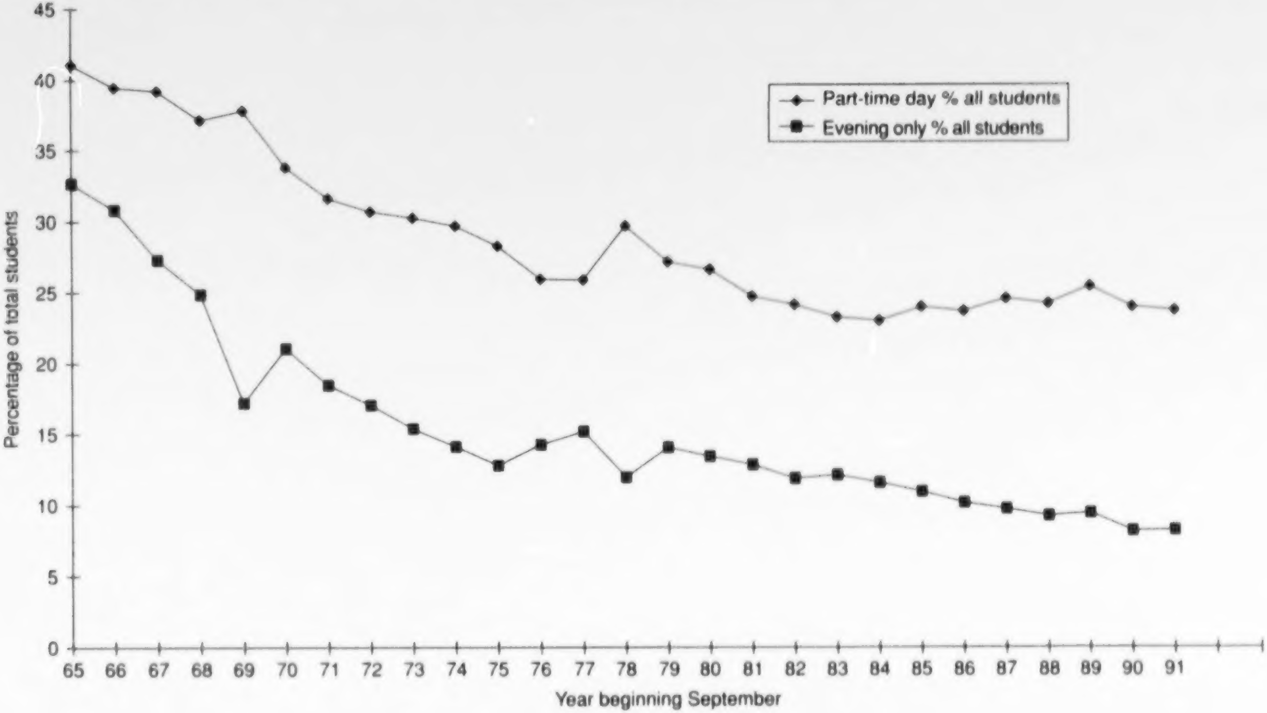
Not only did the enrolment of part-time students fail to keep pace with that of full-timers, it is evident that the evening-only part-time student has been a declining species. In 1965–66, there were 55,000 students studying in the evenings only, nearly 22,000 of them at advanced level (Table 3.8). By 1968–69 the numbers had dropped to 40,000 (21,000 at advanced level). Their decline continued, reaching a low of just under 24,000 in 1978. They remained around this level until the 1990s, when, with additional polytechnic

*Table 3.8* Part-time students on courses leading to recognized qualifications in polytechnics, 1965–66 to 1991–92

| | *Advanced* | | *Non-advanced* | | *Total* | *Part-time day* | *Total evening* | *Evening only* |
|---|---|---|---|---|---|---|---|---|
| | *Part-time day* | *Part-time evening* | *Part-time day* | *Part-time evening* | *Part-time day* | *% all students* | *only* | *% all students* |
| 1965–66 | 23169 | 21921 | 46523 | 33534 | 69692 | 41 | 55455 | 33 |
| 1966–67 | 27502 | 25305 | 41750 | 28767 | 69252 | 39 | 54072 | 31 |
| 1967–68 | 29499 | 23218 | 37836 | 23643 | 67335 | 39 | 46861 | 27 |
| 1968–69 | 28324 | 21426 | 31964 | 18953 | 60288 | 37 | 40379 | 25 |
| 1969–70 | 6986 | 3038 | 7340 | 3475 | 14326 | 38 | 6513 | 17 |
| 1970–71 | 24062 | 15393 | 18823 | 11296 | 42885 | 34 | 26689 | 21 |
| 1971–72 | 28278 | 16472 | 17755 | 10443 | 46033 | 32 | 26915 | 18 |
| 1972–73 | 29440 | 16278 | 14376 | 8043 | 43816 | 31 | 24321 | 17 |
| 1973–74 | 29607 | 15303 | 13147 | 6432 | 42754 | 30 | 21735 | 15 |
| 1974–75 | 34034 | 15252 | 8943 | 5184 | 42977 | 30 | 20436 | 14 |
| 1975–76 | 37282 | 16312 | 8771 | 4613 | 46053 | 28 | 20925 | 13 |
| 1976–77 | 38132 | 15060 | 11066 | 12034 | 49198 | 26 | 27094 | 14 |
| 1977–78 | 40455 | 17045 | 11406 | 13412 | 51861 | 26 | 30457 | 15 |
| 1978–79 | 47684 | 14997 | 13486 | 9742 | 61170 | 30 | 24739 | 12 |
| 1979–80 | 45556 | 17140 | 10023 | 11701 | 55579 | 27 | 28841 | 14 |
| 1980–81 | 46780 | 17915 | 8577 | 10117 | 55357 | 27 | 28032 | 13 |
| 1981–82 | 47255 | 18478 | 6226 | 9344 | 53481 | 25 | 27822 | 13 |
| 1982–83 | 47461 | 17650 | 6284 | 8875 | 53745 | 24 | 26525 | 12 |
| 1983–84 | 48519 | 19189 | 5976 | 9197 | 54495 | 23 | 28386 | 12 |
| 1984–85 | 48919 | 19086 | 5766 | 8514 | 54685 | 23 | 27600 | 12 |
| 1985–86 | 52337 | 19395 | 5972 | 7266 | 58309 | 24 | 26661 | 11 |
| 1986–87 | 53201 | 18278 | 4987 | 6668 | 58188 | 24 | 24946 | 10 |
| 1987–88 | 57496 | 18875 | 5750 | 6162 | 63246 | 25 | 25037 | 10 |
| 1988–89 | 59139 | 18893 | 5215 | 5641 | 64354 | 24 | 24534 | 9 |
| 1989–90 | 65717 | 20547 | 5172 | 5770 | 70889 | 25 | 26317 | 9 |
| 1990–91 | 74388 | 22385 | 4829 | 4608 | 79217 | 24 | 26993 | 8 |
| 1991–92 | 87394 | 27115 | 6034 | 5283 | 93428 | 24 | 32398 | 8 |

*Source*: 1965–68, Pratt and Burgess 1974; 1969 onwards, DES/DfE Statistics of Education.
*Note*: 1969 includes eight polytechnics; 1970 includes 26; 1971–80 includes 30; 1981–88 includes 29 Wales not included in the published statistics); 1989–90 includes 31; 1991 includes 33.

*Figure 3.7* Part-time students as a percentage of total students in polytechnics, 1965–66 to 1991–92



designations, they rose to 32,000 in 1991. Their share of total enrolments fell correspondingly, from a third of all students in 1965–66 to 12 per cent in 1978 (Figure 3.7). But despite the modest revival in numbers, their share of the total continued to decline, so that in 1991 they represented a mere 8 per cent of all students.

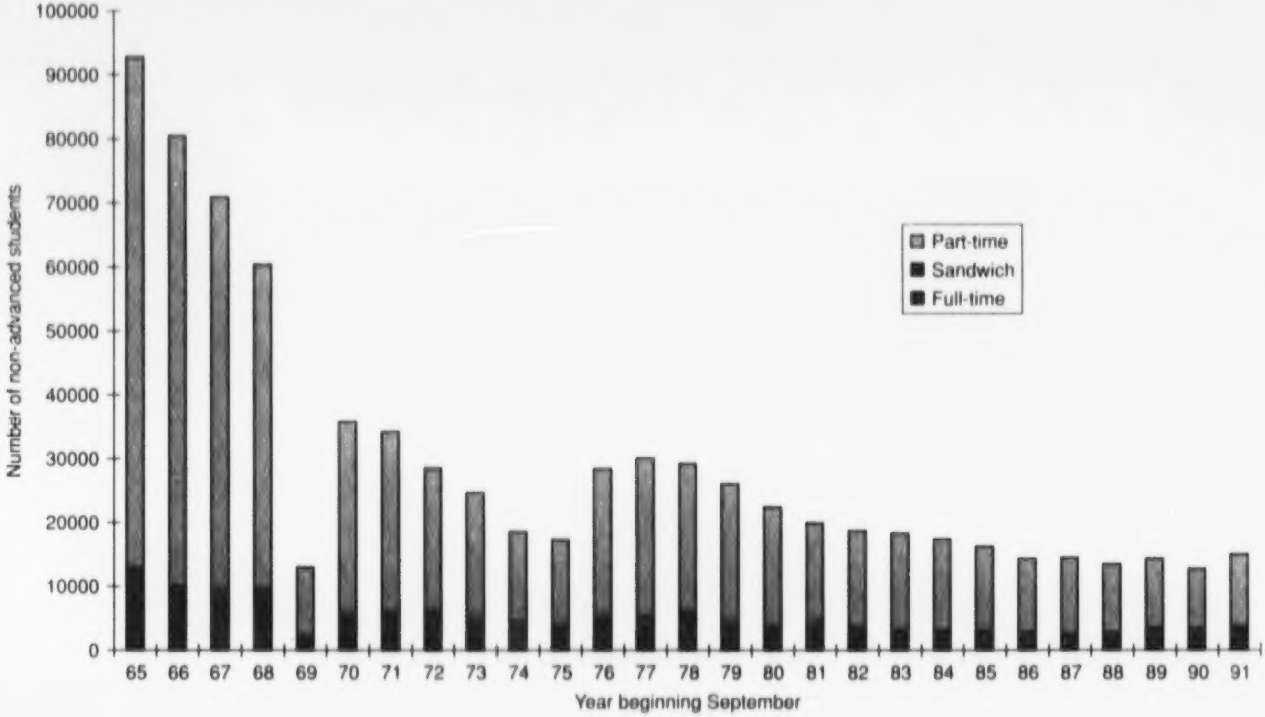
## Courses of study

What kinds of courses were these students studying? The 1966 White Paper had stated the aim of polytechnics to offer higher education courses at both degree and sub-degree level. In the constituent colleges there was a considerable mix of courses. Pratt and Burgess (1974) recorded that over half the students in 1965–66 were not in higher education at all, as they were studying courses at non-advanced level (Table 3.2). They showed a rapid decline in these numbers from 93,000 to 60,000 in 1968–69. The non-advanced work tended to be concentrated on part-time courses. There were only 12,000 full-time and sandwich students at non-advanced level in 1965–66 and only 9,000 in 1968–69. Pratt and Burgess criticized this shedding of lower level work, though it was, arguably, implicit in the polytechnic policy. They pointed out that other colleges expanded their advanced work without dropping lower level work and that the polytechnic colleges had increased their proportion of advanced students more by shedding non-advanced work than by expansion: 'expansion as an objective is achieved only at the cost of reduced overall numbers'.

In later years, the pattern of shedding lower level work continued, though it levelled out in the 1980s. The numbers of non-advanced students on full-time and sandwich courses continued to decline to a low of under 4,000 in 1975 (Figure 3.8). In the late 1970s, they were boosted by mergers with colleges of education, but the decline then continued to just under 2,600 (excluding Wales) by 1987–88. There was a modest revival thereafter with the creation of additional polytechnics, to nearly 3,700 (in 33 polytechnics excluding Wales) in 1991. There was a similar decline in part-time non-advanced students, from 60,000 in 1968–69 to 13,000 in 1975. Numbers rose again in the late 1970s, but fell back steadily to under 10,000 in 1990–91 (in 33 polytechnics excluding Wales), despite the addition of four polytechnics to the sector. It is worth noting that the changes of the late 1970s produced more part-time evening students. All these changes meant that by 1988, the polytechnics had only 5 per cent of non-advanced work, compared with 55 per cent in 1965.

At advanced level the courses of study reflected the traditional wide range of the further education sector. Pratt and Burgess's (1974) data do not disaggregate full- and part-time students here. In 1965–66, there were about 14,000 students on degree courses (under 4,000 on CNAA courses, the rest on university courses). There were over 500 on university higher degree courses, and another 2,000 on other postgraduate and research programmes.

*Figure 3.8* Non-advanced students in polytechnics by mode of study, 1965–66 to 1991–92



Over 5,600 were on HND courses and more than 22,000 on HNC courses. Over 23,000 were on various professional courses and 3,300 on art courses. The data show the polytechnics at that time with some way to go to develop a substantial range of degree courses through the CNAA, but meeting the needs of the second group of students identified in the policy, those on sub-degree level courses.

In subsequent years, there was substantial growth of numbers on degree courses (Figure 3.9). Table 3.9 summarizes the available data. The table is complicated by changes in the basis of data collection, particularly the separation of teacher education courses, but the overall trends are clear. By 1971, there were over 35,000 students on degree courses, more than twice as many as in 1965. By now CNAA degree students (24,600) far outnumbered those on university courses. These numbers had doubled again by 1977 (including teacher education degrees), when university degree students had dwindled to less than 1,000, and yet again by 1988. In that year there were over 150,000 on degree courses in 29 polytechnics (excluding Wales), more than ten times the 1965 figure. By 1992, in the 33 polytechnics there were nearly 279,000.

The increasing dominance of the first degree in the polytechnics is evident. Growth of other advanced courses was modest (Figure 3.10). From 1971 to 1988 numbers increased only from 70,000 to 82,000. It is this category that constituted the second main group of students intended to be covered by the polytechnic policy, those on sub-degree courses. From 65 per cent of advanced work in 1971, the proportion of students on other advanced courses diminished to 32 per cent in 29 polytechnics in 1988 and 25 per cent in 1992 (in 33 polytechnics).

There was considerable growth at postgraduate level (Figure 3.11). Numbers studying for higher degrees exceeded 1,000 in 1971 then grew ten-fold by 1988 to over 10,000. In 33 polytechnics in 1992 there were over 25,000 students on higher degree courses. There was slower growth of other postgraduate work, from just under 5,000 in 1971 to over 10,000 (including those in teacher education) in 1988 in 29 polytechnics and to over 18,000 by 1992 in 33 polytechnics. Despite this growth of postgraduate work in the polytechnics, these numbers were considerably lower than those in the universities, with over 100,000 postgraduate students in England and Wales.

From 1970 to 1987, it is possible to disaggregate data on qualification aims by mode of study (Table 3.10). In 1971 (the first year of data for 30 polytechnics), there were over 23,300 full-time and sandwich students on CNAA degrees, compared with only 1,300 part-time. On university degree courses, there were 9,000 full-time and nearly 1,600 part-time students. Full-time degree students constituted 53 per cent of all advanced full-time and sandwich students. By 1987, degree students accounted for 68 per cent of all advanced full-time and sandwich students.

Whilst most degree students were full-time and sandwich students, the number of part-timers increased more than ten-fold after 1971 (Figure 3.12). The 14,000 part-time CNAA degree students in 1987 comprised 11 per cent

*Table 3.9* **Qualification aims of students in polytechnics, 1965–66 to 1992–93**

| | *CNAA degree* | *University degree* | | | *Higher degree* | *Post-graduate* | *PG ITT* | *Other advanced* | *Total advanced* | *Non-advanced* |
|---|---|---|---|---|---|---|---|---|---|---|
| 1965–66 | 3977 | 10749 | | | 508 | 2038 | | 54845 | 86843 | 92821 |
| 1966–67 | 6518 | 12316 | | | 396 | 3252 | | 74138 | 115454 | 80514 |
| 1967–68 | 9466 | 12693 | | | 639 | 3547 | | 74468 | 122972 | 70885 |
| 1968–69 | 13302 | 11448 | | | 732 | 4265 | | 72247 | 126744 | 60384 |
| 1969–70 | 5387 | 2049 | | | 49 | 1059 | | 16374 | 32354 | 12961 |
| 1970–71 | 18214 | 8813 | | | 558 | 4379 | | 59116 | 118107 | 35737 |
| 1971–72 | 24634 | 10631 | | | 1050 | 4923 | | 70039 | 146542 | 34380 |
| 1972–73 | 29686 | 9046 | | | 1199 | 5223 | | 68993 | 152879 | 28583 |
| 1973–74 | 35326 | 5971 | | | 1245 | 5442 | | 72888 | 162169 | 24676 |
| 1974–75 | 46989 | 3503 | | | 1505 | 5441 | | 64292 | 172222 | 18537 |
| 1975–76 | 55811 | 2055 | B Ed | Cert Ed | 1970 | 6483 | | 79372 | 203557 | 17311 |
| 1976–77 | 64010 | 1081 | 3701 | 11877 | 2236 | 5756 | 1010 | 72807 | 244157 | 30219 |
| 1977–78 | 70613 | 743 | 4765 | 6649 | 2587 | 5504 | 1742 | 77645 | 254760 | 30077 |
| | | | Initial ITT | | | | | | | |
| 1978–79 | 75136 | 809 | 10715 | | 3632 | 7880 | 1645 | 76899 | 265021 | 29280 |
| 1979–80 | 80183 | 741 | 8773 | | 3214 | 7761 | 1409 | 74635 | 267822 | 26094 |
| 1980–81 | 87173 | 727 | 6832 | | 3830 | 7485 | 1812 | 77570 | 281973 | 18312 |
| 1981–82 | 96219 | 224 | 6551 | | 4422 | 7086 | 1948 | 79678 | 301070 | 22517 |
| 1982–83 | 105233 | 520 | 6425 | | 4705 | 7177 | 1428 | 78539 | 317633 | 18814 |
| 1983–84 | 112781 | 1538 | 7329 | | 6311 | 7393 | 1336 | 79106 | 338778 | 18312 |
| 1984–85 | 117154 | 1490 | 7388 | | 6069 | 7936 | 1390 | 78896 | 347745 | 17423 |
| 1985–86 | 119621 | 844 | 7886 | | 6724 | 8140 | 1613 | 81971 | 356763 | 16264 |
| 1986–87 | 121211 | 1467 | 8173 | | 9098 | 7884 | 1720 | 81900 | 364024 | 14101 |
| 1987–88 | 125232 | 2437 | 9426 | | 7780 | 9669 | 1978 | 86299 | 381894 | 14507 |
| | First degree | | | | | | | | | |
| 1988–89 | 150292 | | 10826 | | 10355 | 8486 | 2206 | 81301 | 426790 | 13490 |
| 1989–90 | 156838 | | 11876 | | 12049 | 9697 | 2373 | 84598 | 448518 | 14323 |
| 1990–91 | 184650 | | 12825 | | 16428 | 10608 | 2604 | 88502 | 515696 | 12760 |
| 1991–92 | 223197 | | 15406 | | 20869 | 12389 | 3895 | 103547 | 621801 | 15005 |
| 1992–93 | 261608 | | 17185 | | 25660 | 13942 | 4400 | 108369 | 431164 | 12273 |

*Source:* 1965–69, Pratt and Burgess 1974; 1970 onwards, DES/DfE Statistics of Education.

*Notes:* 1969 includes eight polytechnics; 1970 includes 26; 1971–80 includes 30; 1981–88 includes 29 (excludes Wales); 1989–90 includes 31; 1991–92 includes 33.

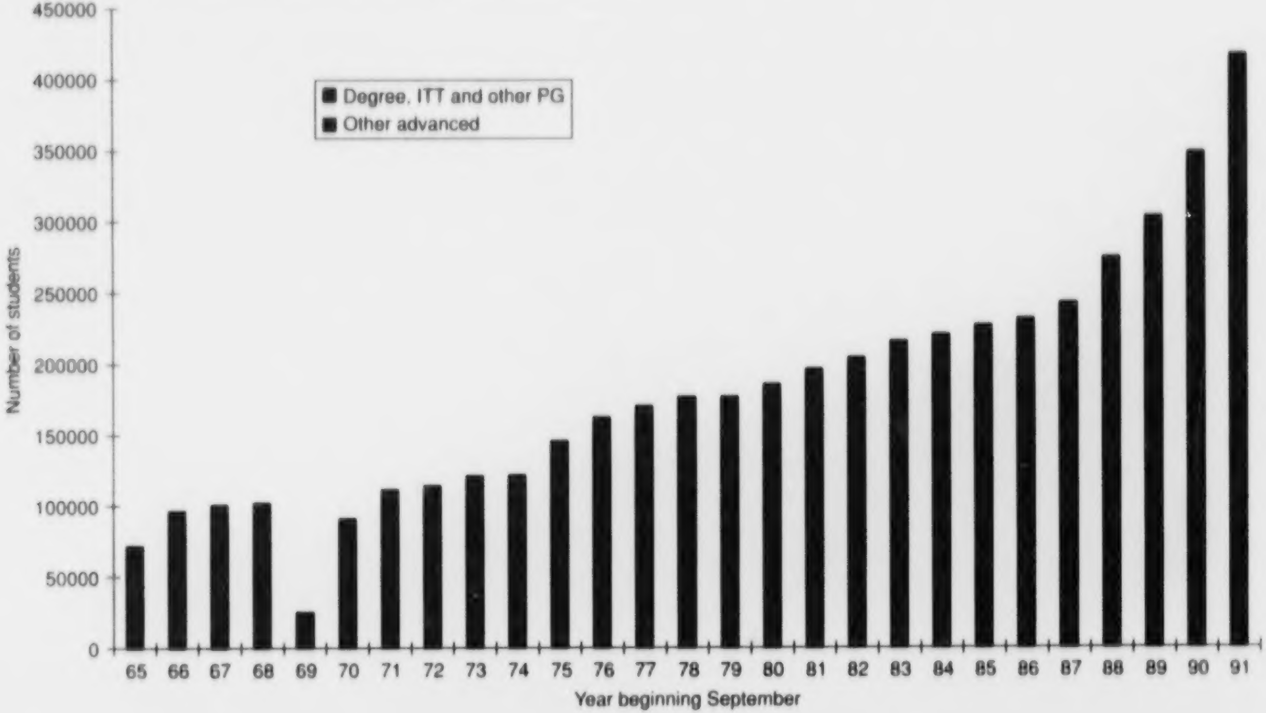


*Figure 3.10* Advanced students in polytechnics, 1965–66 to 1991–92

*Table 3.10* **Students in polytechnics by qualification aim and mode of study, 1965–66 to 1991–92**

| | *CNAA degree* | | *Uni. degree* | | *Education* | | | | *Higher degree* | | *Postgraduate* | | *Postgrad. ITT* | | *Other advanced* | | *Non-advanced* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* | *FT/S* | *PT* |
| 1965–66 | 3977 | | 10749 | | | | | | 508 | | 2038 | | | | 54845 | | 12764 | 80057 |
| 1966–67 | 6518 | | 12316 | | | | | | 396 | | 3252 | | | | 74138 | | 9997 | 70517 |
| 1967–68 | 9466 | | 12693 | | | | | | 639 | | 3547 | | | | 74468 | | 9406 | 61479 |
| 1968–69 | 13302 | | 11448 | | | | | | 732 | | 4265 | | | | 72247 | | 9467 | 50917 |
| 1969–70 | 5387 | | 2049 | | | | | | 49 | | 1059 | | | | 16374 | | 2146 | 10815 |
| 1970–71 | 17700 | 514 | 7285 | 1528 | | | | | 202 | 356 | 822 | 3557 | | | 25616 | 33500 | 5618 | 30119 |
| 1971–72 | 23329 | 1305 | 9049 | 1582 | | | | | 343 | 707 | 1175 | 3748 | | | 32637 | 37402 | 6127 | 28253 |
| 1972–73 | 27797 | 1889 | 7696 | 1350 | | | | | 468 | 731 | 1193 | 4030 | | | 31275 | 37718 | 6164 | 22419 |
| 1973–74 | 33079 | 2247 | 5123 | 848 | | | | | 421 | 824 | 1364 | 4078 | | | 31599 | 41289 | 5097 | 19579 |
| 1974–75 | 43978 | 3011 | 2569 | 934 | | | | | 537 | 968 | 1239 | 4202 | | | 28497 | 35795 | 4410 | 14127 |
| 1975–76 | 52169 | 3642 | 1191 | 864 | B Ed | | Cert Ed | | 615 | 1355 | 2134 | 4349 | | | 35988 | 43384 | 3927 | 13384 |
| 1976–77 | 59210 | 4800 | 320 | 761 | 3701 | 0 | 11877 | 0 | 756 | 1480 | 1450 | 4306 | 1010 | 0 | 29675 | 43132 | 5537 | 24682 |
| 1977–78 | 65492 | 5121 | 160 | 583 | 4754 | 11 | 6278 | 371 | 907 | 1680 | 1338 | 4166 | 1656 | 86 | 32163 | 45482 | 5256 | 24821 |
| 1978–79 | 69025 | 6111 | 192 | 617 | 10248 | 467 | | | 1158 | 2474 | 2324 | 5556 | 1605 | 40 | 29483 | 47416 | 6052 | 23228 |
| 1979–80 | 73277 | 6906 | 245 | 496 | 8204 | 569 | | | 1071 | 2143 | 2154 | 5607 | 1409 | 0 | 27675 | 46960 | 4370 | 21724 |
| 1980–81 | 79085 | 8088 | 226 | 501 | 6130 | 702 | | | 1242 | 2588 | 1977 | 5508 | 1807 | 5 | 30267 | 47303 | 3139 | 15173 |
| 1981–82 | 87104 | 9115 | 199 | 25 | 5700 | 851 | | | 1172 | 3250 | 1767 | 5319 | 1907 | 41 | 32546 | 47132 | 3823 | 18694 |
| 1982–83 | 95143 | 10090 | 143 | 377 | 5748 | 677 | | | 1078 | 3627 | 1716 | 5461 | 1405 | 23 | 33683 | 44856 | 3655 | 15159 |
| 1983–84 | 101339 | 11442 | 1204 | 334 | 6488 | 841 | | | 1449 | 4862 | 2012 | 5381 | 1336 | 0 | 34258 | 44848 | 3139 | 15173 |
| 1984–85 | 104591 | 12563 | 1157 | 333 | 6827 | 561 | | | 1665 | 4404 | 2265 | 5671 | 1388 | 2 | 34425 | 44471 | 3143 | 14280 |
| 1985–86 | 106253 | 13368 | 459 | 385 | 7513 | 373 | | | 1914 | 4810 | 2139 | 6001 | 1608 | 5 | 35181 | 46790 | 3026 | 13238 |
| 1986–87 | 106044 | 15167 | 1083 | 384 | 7818 | 355 | | | 2152 | 6946 | 2149 | 5735 | 1717 | 3 | 38654 | 43246 | 2646 | 11455 |
| 1987–88 | 111040 | 14192 | 2437 | 0 | 9029 | 397 | | | 2462 | 5318 | 2226 | 7443 | 1976 | 2 | 37280 | 49019 | 2595 | 11912 |
| 1988–89 | 139466 | | | | 10826 | | | | 10355 | | 8486 | | 2206 | | 81301 | | 2634 | 10856 |
| 1989–90 | 156838 | | | | 11876 | | | | 12049 | | 9697 | | 2373 | | 85434 | | 3381 | 10942 |
| 1990–91 | 184650 | | | | 12825 | | | | 16428 | | 10608 | | 2604 | | 91686 | | 3323 | 9437 |
| 1991–92 | 223197 | | | | 15406 | | | | 20869 | | 12389 | | 3895 | | 104455 | | 3688 | 11317 |

*Source*: 1965–66, Pratt and Burgess 1974; 1970–91, DES/DfE Statistics of Education.
*Notes*: 1969 includes eight polytechnics; 1970 includes 26; 1971–80 includes 30; 1981–88 includes 29 (excludes Wales); 1989–90 includes 31; 1991 includes 33.

of the total. Enrolment on university degree courses dropped as institutions gradually got their own degrees validated by CNAA, though some increase occurred as colleges of education with university-validated courses merged with the polytechnics.

At postgraduate level, there was a much higher proportion of part-time students. In 1970, over 4,000 were part-time, compared with just over 1,500 full-time (Table 3.10). Of the students on other advanced (mainly sub-degree) courses, 57 per cent were part-time. The proportion of part-time students was maintained, with nearly 13,000 in 1987, compared with fewer than 5,000 full-time students. On non-advanced courses, part-time students still accounted for 57 per cent of the total.

The uncertainty of the role of the polytechnics in teacher training is reflected in the numbers of students. The data are first separated in 1976, when over 15,000 students are identified on these courses, the majority taking the Certificate of Education (Table 3.10). Numbers on this course declined as teaching became a graduate profession. Subsequently, the reduction of overall numbers in teacher education is reflected in polytechnic enrolments. Only in the mid-1980s do numbers increase, with enrolments in initial teacher training reaching just over 9,000 in 1987, still fewer than in 1978. Fewer than 400 of these students were part-time. At postgraduate level, the picture is similar, with numbers enrolled varying over the years, but with a steady increase from 1985 and virtually all full-time.

## Subjects of study

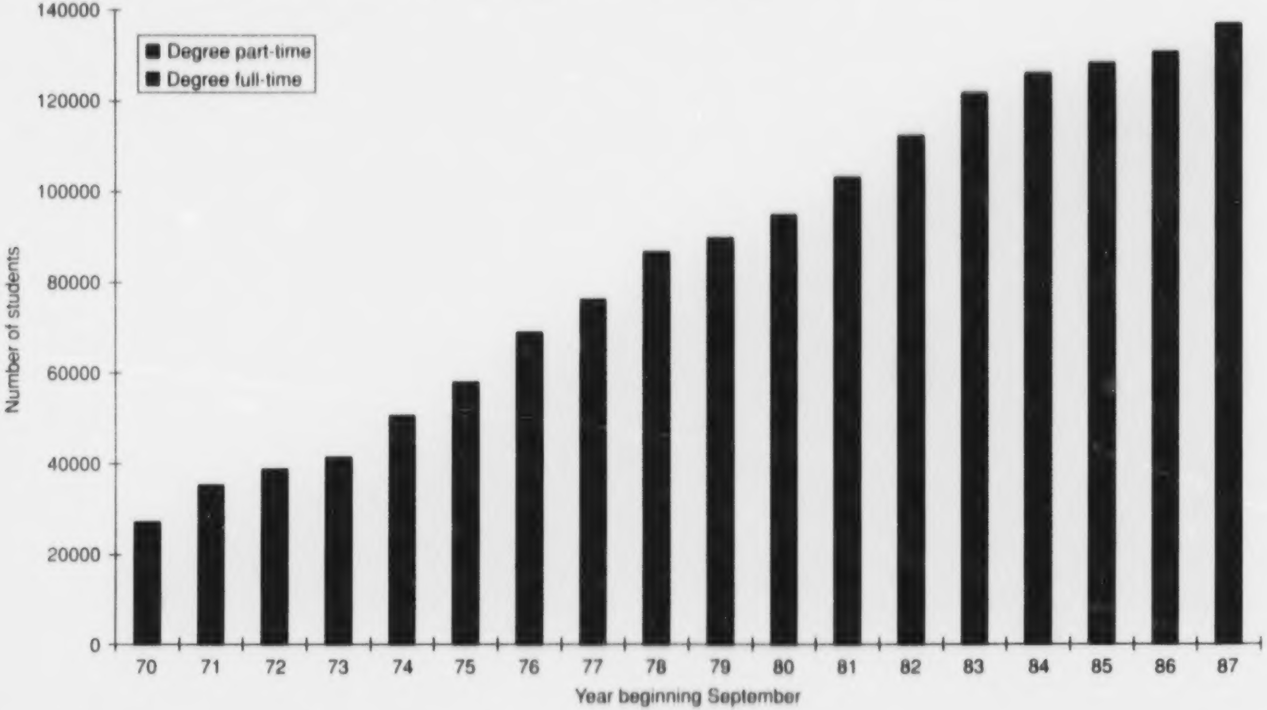
The post-war policy debates affecting the development of the technical colleges and other non-university institutions were mainly concerned with the output of scientific and technical personnel (Burgess and Pratt, 1970). The 1956 White Paper which led to the creation of the colleges of advanced technology, for example, started with a ringing paragraph by the then Prime Minister Sir Anthony Eden:

> The prizes will not go to the countries with the largest population. Those with the best systems of education will win. Science and technical skill will give a dozen men the power to do as much as thousands did fifty years ago. Our scientists are doing brilliant work. But if we are to make full use of what we are learning, we shall need many more scientists, engineers and technicians.
>
> (Ministry of Education, 1956)

The CATs were meant to make a substantial contribution to the output of advanced technologists and the bulk of their students were on courses in science and engineering subjects.

By the mid-1960s, there is an apparent shift of emphasis. Whilst the 1966 White Paper refers to a report of and consultations with the National

*Figure 3.12* Degree students in polytechnics by mode of study, 1970–71 to 1987–88



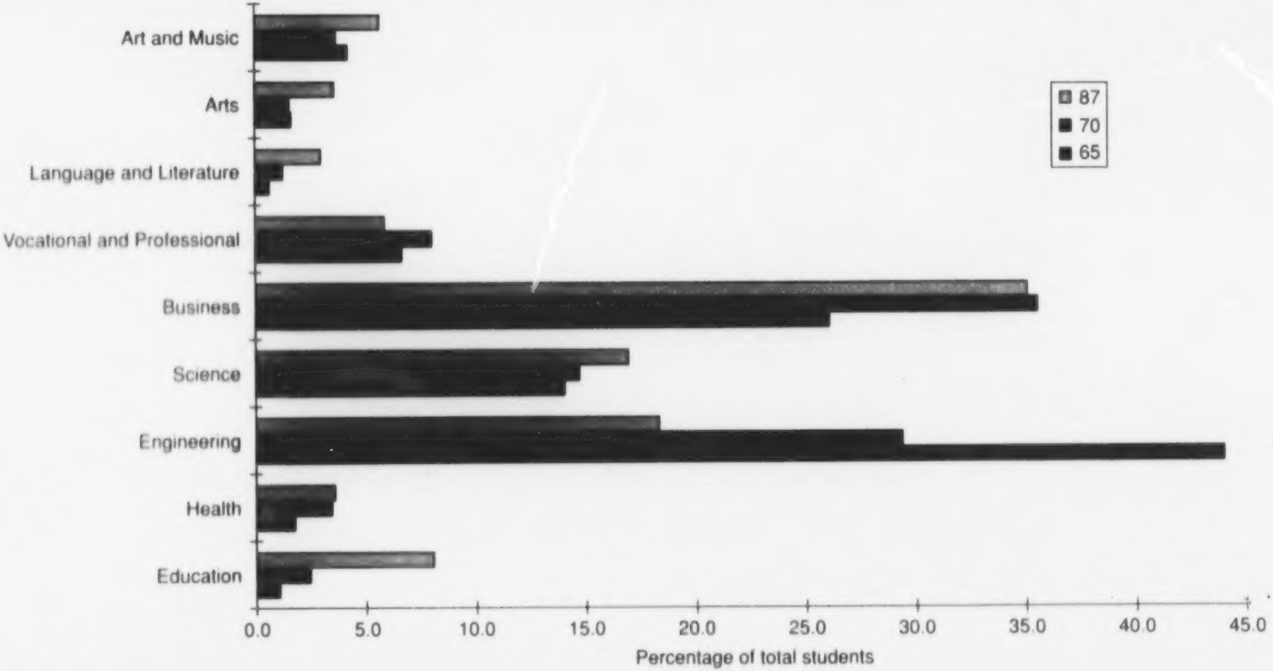
*Note:* Includes CNAA, University, BEd and degree level ITT.

*Table 3.11* **Students on advanced courses in polytechnics by subject of study, 1965–66 to 1987–88**

| | *Education* | | *Health Welfare, etc.* | | *Engineering Technology* | | *Science* | | *Social Admin. Business* | | *Professional and Vocational* | | *Language, Literature and Area Studies* | | *Arts other than Language* | | *Art and Design Music* | | *Total all students* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Total* | % | *Total* | % | *Total* | % | *Total* | % | *Total* | % | *Total* | % | *Total* | % | *Total* | % | *Total* | % | |
| 1965–66 | 813 | 1.1 | 1357 | 1.8 | 33843 | 44.0 | 10783 | 14.0 | 20048 | 26.1 | 5091 | 6.6 | 489 | 0.6 | 1254 | 1.6 | 3242 | 4.2 | 76920 |
| 1966–67 | 921 | 1.0 | 2098 | 2.2 | 34845 | 36.7 | 12522 | 13.2 | 29108 | 30.6 | 7992 | 8.4 | 524 | 0.6 | 1358 | 1.4 | 5684 | 6.0 | 95052 |
| 1967–68 | 1688 | 1.7 | 2362 | 2.3 | 33874 | 33.6 | 13648 | 13.5 | 33357 | 33.1 | 7954 | 7.9 | 760 | 0.8 | 1268 | 1.3 | 5892 | 5.8 | 100803 |
| 1968–69 | 2039 | 2.0 | 2560 | 2.5 | 33449 | 32.8 | 13512 | 13.2 | 34854 | 34.2 | 8401 | 8.2 | 955 | 0.9 | 1509 | 1.5 | 4715 | 4.6 | 101994 |
| 1969–70 | Information not available | | | | | | | | | | | | | | | | | | |
| 1970–71 | 2244 | 2.5 | 3130 | 3.4 | 26751 | 29.4 | 13380 | 14.7 | 32358 | 35.5 | 7296 | 8.0 | 1143 | 1.3 | 1428 | 1.6 | 3350 | 3.7 | 91080 |
| 1971–72 | 3984 | 3.6 | 4471 | 4.0 | 29329 | 26.4 | 16174 | 14.5 | 39599 | 35.6 | 9368 | 8.4 | 1741 | 1.6 | 2115 | 1.9 | 4494 | 4.0 | 111275 |
| 1972–73 | 4067 | 3.6 | 4718 | 4.1 | 29022 | 25.4 | 16407 | 14.4 | 41662 | 36.5 | 9190 | 8.1 | 2255 | 2.0 | 1877 | 1.6 | 4949 | 4.3 | 114147 |
| 1973–74 | 4108 | 3.5 | 5202 | 4.5 | 27992 | 24.0 | 15797 | 13.6 | 44434 | 38.1 | 9793 | 8.4 | 2309 | 2.0 | 1593 | 1.4 | 5268 | 4.5 | 116496 |
| 1974–75 | 4817 | 3.8 | 5493 | 4.4 | 29042 | 23.0 | 16073 | 12.7 | 50635 | 40.2 | 10320 | 8.2 | 2582 | 2.0 | 1202 | 1.0 | 5942 | 4.7 | 126106 |
| 1975–76 | 11964 | 8.2 | 6349 | 4.4 | 31371 | 21.5 | 16970 | 11.6 | 56856 | 39.0 | 11559 | 7.9 | 2967 | 2.0 | 1007 | 0.7 | 6648 | 4.6 | 145691 |
| 1976–77 | 18358 | 11.3 | 7140 | 4.4 | 33376 | 20.5 | 18810 | 11.6 | 61590 | 37.9 | 11180 | 6.9 | 3378 | 2.1 | 1103 | 0.7 | 7542 | 4.6 | 162477 |
| 1977–78 | 19652 | 11.5 | 7115 | 4.2 | 34823 | 20.5 | 20458 | 12.0 | 63407 | 37.2 | 11595 | 6.8 | 3801 | 2.2 | 1220 | 0.7 | 8177 | 4.8 | 170248 |
| 1978–79 | 17475 | 9.9 | 7191 | 4.1 | 36139 | 20.5 | 21305 | 12.1 | 65559 | 37.1 | 11955 | 6.8 | 3669 | 2.1 | 4676 | 2.6 | 8747 | 4.9 | 176716 |
| 1979–80 | 16208 | 9.1 | 7132 | 4.0 | 36916 | 20.7 | 23009 | 12.9 | 64567 | 36.1 | 12389 | 6.9 | 4135 | 2.3 | 5156 | 2.9 | 9176 | 5.1 | 178688 |
| 1980–81 | 15239 | 8.2 | 6494 | 3.5 | 37801 | 20.4 | 26738 | 14.4 | 66442 | 35.8 | 12505 | 6.7 | 4370 | 2.4 | 6160 | 3.3 | 9635 | 5.2 | 185384 |
| 1981–82 | 14258 | 7.3 | 7370 | 3.8 | 38962 | 19.9 | 29432 | 15.0 | 70659 | 36.0 | 12891 | 6.6 | 4838 | 2.5 | 7327 | 3.7 | 10391 | 5.3 | 196128 |
| 1982–83 | 14502 | 7.1 | 7676 | 3.8 | 39757 | 19.5 | 30894 | 15.1 | 72555 | 35.6 | 13472 | 6.6 | 5746 | 2.8 | 8129 | 4.0 | 11296 | 5.5 | 204027 |
| 1983–84 | 15453 | 7.2 | 8419 | 3.9 | 40243 | 18.6 | 33544 | 15.5 | 76939 | 35.7 | 14059 | 6.5 | 6078 | 2.8 | 8974 | 4.2 | 12085 | 5.6 | 215794 |
| 1984–85 | 15801 | 7.2 | 8680 | 3.9 | 40455 | 18.4 | 36416 | 16.5 | 78172 | 35.5 | 14324 | 6.5 | 6631 | 3.0 | 7473 | 3.4 | 12371 | 5.6 | 220323 |
| 1985–86 | 17209 | 7.6 | 8752 | 3.9 | 40870 | 18.0 | 37686 | 16.6 | 80944 | 35.7 | 14148 | 6.2 | 6965 | 3.1 | 7614 | 3.4 | 12611 | 5.6 | 226799 |
| 1986–87 | 18263 | 7.8 | 8935 | 3.8 | 43287 | 18.5 | 39555 | 16.9 | 81129 | 34.8 | 13786 | 5.9 | 6942 | 3.0 | 8507 | 3.6 | 13047 | 5.6 | 233451 |
| 1987–88 | 19564 | 8.1 | 8654 | 3.6 | 44451 | 18.3 | 41055 | 16.9 | 85136 | 35.1 | 14240 | 5.9 | 7244 | 3.0 | 8738 | 3.6 | 13719 | 5.7 | 242801 |

*Sources*: 1965–68, Pratt and Burgess 1974; 1969 onwards, DES/DfE Statistics of Education.
*Notes*: 1970 includes 26 polytechnics; 1971–80 includes 30; 1981–88 includes 29 (Wales not included in the published statistics); 1989–90 includes 31; 1991 includes 33.

*Figure 3.13* Students on advanced courses in polytechnics by subject of study, 1965, 1970 and 1987



Advisory Council on Education for Industry and Commerce, it does not focus on scientific or technological education. Rather its concern is with meeting the demand for expansion from students, reflecting the change in social and political climates, illustrated by the Robbins Report. The reference in the White Paper to polytechnics as 'comprehensive' implies that they would develop courses across a wide range of subject areas. However, the intention that they should remain committed to vocational higher education with close links with industry, commerce and the professions implies that they might still be expected to concentrate on subjects with an obvious vocational relevance. DES officials also expected that the main growth of CNAA courses would be in science and technology, and throughout the 1970s and 1980s the government remained anxious to ensure the expansion of numbers in science and technology. So what happened in subsequent years?

At the time the polytechnic policy was announced, the historic, mainly technical, functions of the constituent colleges were still evident, but they were beginning to show signs of comprehensiveness in terms of their subjects of study. In 1965–66 nearly half of their advanced students were on courses in engineering and technology (Table 3.11). But like the rest of the further education sector, their historic concentration on technical subjects was diminishing. Over a quarter of students were on courses in the social sciences, business and administration. About 14 per cent were in science, with smaller percentages in six other broad subject areas including arts and humanities disciplines.

In the next few years these trends were accelerated. Enrolments in the social sciences increased by 50 per cent by 1968–69, so that this subject area now represented a third of the total. Engineering enrolments remained static, so that these students represented a declining proportion of the total (Figure 3.13). When the polytechnics became formally designated, many of these patterns continued, though there was overall growth of numbers and the picture was complicated, in particular, by amalgamations with colleges of education.

The most obvious feature of the years from 1970 (Table 3.11) is the continuing overall decline in the proportion of students in engineering and technology. By 1987, fewer than a fifth of advanced students were in this subject area, far from the 44 per cent in the constituent colleges in 1965 (Figure 3.13). Numbers had increased by a third since 1965 to 44,000, but the numbers studying social science had quadrupled since 1965 (from 20,000 to 85,000) and consistently represented more than a third of the total from 1970. Science, too, had grown rapidly, from just over 13,000 students in 1970 to just over 41,000 in 1987.

In terms of the government's continuing policy concerns with expanding numbers of students in science and technology, the polytechnics were not conspicuously successful. In 1987 only a third of their advanced students were in these subject areas, a lower proportion than the 43 per cent of full-time undergraduates in the UK universities. Similarly, students in other professional and vocational subjects fell from 8 to 6 per cent of the total, despite doubling in numbers.

The fastest growing subject areas in the polytechnics were in fact education, languages, other arts, and art, design and music. Numbers in education grew by nearly nine-fold to over 19,000 in 1987, or from 2.5 to 8 per cent (Figure 3.13), assisted of course by amalgamation with colleges of education. In the other three subject areas (combined) they grew from under 6,000 in 1970 to nearly 30,000 in 1987.

## Characteristics of students

We have seen the extent to which the polytechnics succeeded in fulfilling the numerical intentions of the policy for expansion and in offering the three kinds of courses identified in the policy statements. What kinds of students did the polytechnics attract to their courses? How far did they maintain the openness advocated by the proponents of the 'service tradition'? How far were they 'comprehensive academic communities'? Did they fulfil the social goal of 'democratizing' higher education as OECD (1991) put it? We look now at some of the characteristics of the students enrolled in the polytechnics and some of the factors affecting these.

### *Women students*

Neither the Woolwich and Lancaster speeches nor the 1966 White Paper paid specific attention to the needs of women in higher education. Indeed they are not mentioned at all. This, in some ways, is not surprising. The technical college tradition had not been noticeably concerned with them either, though Robinson (1968) does make several references. In 1965–66 there were only 9,360 full-time women students in advanced further education, compared with nearly 36,000 in universities and over 53,000 in colleges of education (Pratt and Burgess, 1974). In the polytechnic colleges, there were just over 21,500 women students (13 per cent of the total) (Table 3.12), the majority on non-advanced courses. By 1968–69 their numbers had increased only modestly to just over 23,300. As Pratt and Burgess pointed out, these numbers concealed conflicting trends. Full-time and sandwich numbers increased. Women represented 32 per cent of all full-time students by 1968–69. But part-time numbers declined as overall numbers dropped, and women remained less than 10 per cent of the total on these courses. Pratt and Burgess commented that the shedding of part-time students undermined the intention to remain comprehensive academic communities in terms of the opportunities they offered for women students.

Whilst these comments were apt at the time, subsequent years saw the reversal of the trends. As the polytechnics expanded and particularly with the reorganization of the colleges of education, they increased both their

*Table 3.12* Sex of students in polytechnics, 1965–66 to 1991–92

| | *Men* | *Unknown* | *Women* | *Women %* | *Total* |
|---|---|---|---|---|---|
| 1965–66 | 148196 | | 21545 | 13 | 169741 |
| 1966–67 | 151844 | | 23736 | 14 | 175580 |
| 1967–68 | 147339 | | 24359 | 14 | 171698 |
| 1968–69 | 139049 | | 23329 | 14 | 162378 |
| 1969–70 | 34032 | | 7044 | 17 | 41076 |
| 1970–71 | 127660 | | 24014 | 16 | 151674 |
| 1971–72 | 130465 | | 32387 | 20 | 162852 |
| 1972–73 | 124671 | | 34621 | 22 | 159292 |
| 1973–74 | 120462 | | 36242 | 23 | 156704 |
| 1974–75 | 119668 | | 39441 | 25 | 159109 |
| 1975–76 | 129296 | | 48505 | 27 | 177801 |
| 1976–77 | 132495 | | 57333 | 30 | 189828 |
| 1977–78 | 136878 | | 62076 | 31 | 198954 |
| 1978–79 | 139163 | | 65025 | 32 | 204188 |
| 1979–80 | 135974 | | 67149 | 33 | 203123 |
| 1980–81 | 135987 | | 70348 | 34 | 206335 |
| 1981–82 | 137905 | | 75713 | 35 | 213618 |
| 1982–83 | 142987 | | 82461 | 37 | 225448 |
| 1983–84 | 147115 | | 89945 | 38 | 237060 |
| 1984–85 | 146951 | | 94723 | 39 | 241674 |
| 1985–86 | 147691 | | 99168 | 40 | 246859 |
| 1986–87 | 148328 | | 103880 | 41 | 252208 |
| 1987–88 | 151003 | | 110865 | 42 | 261868 |
| 1988–89 | 148347 | 11392 | 111206 | 43 | 270945 |
| 1989–90 | 159845 | 12307 | 124685 | 44 | 296837 |
| 1990–91 | 179207 | 11045 | 146385 | 45 | 336637 |
| 1991–92 | 209627 | 12936 | 178692 | 46 | 401255 |

*Sources*: 1965–68, Pratt and Burgess 1974; 1969– DES/DfE Statistics of Education (Further Education), figures supplied by the University of Glamorgan.
*Notes*: 1969 includes eight polytechnics; 1970 includes 26; 1971–88 includes 30; 1989–90 includes 32, 1991 includes 33.

numbers and percentage of women students ('*faute de mieux*' according to Locke *et al.*, 1985). The number of women nearly doubled to almost 49,000 by 1975, forming over a quarter of the student body (Figure 3.14). This trend continued so that in 1988, women were approaching half (43 per cent) the student body in the 30 polytechnics. By 1991 in 33 institutions the 179,000 women accounted for 46 per cent of the total.

One of the reasons why, in the early years of the polytechnics, there were fewer women on degree courses than in universities, was their emphasis on engineering and technical areas, traditionally male preserves. Whitburn *et al.* (1976) showed only 4 per cent of engineering students were female in 1972–73, compared to 24 per cent in social, administrative and business studies and 55 per cent in language, literature and area studies.

*Figure 3.14* Sex of students in polytechnics, 1965–66 to 1991–92

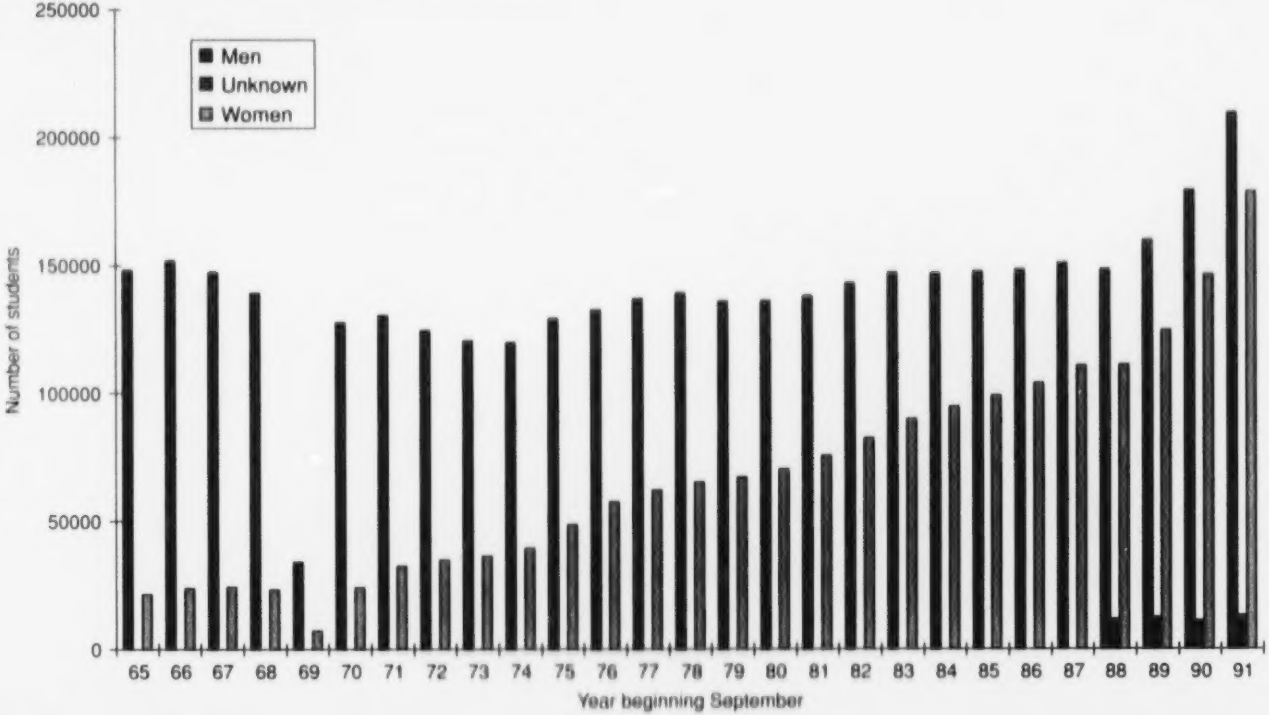


*Table 3.13* **Sex of students on advanced courses in polytechnics by subject of study, 1970–71 to 1987–88**

| | *Education* | | *Health Welfare, etc.* | | *Engineering Technology* | | *Science* | | *Social, Administration Business* | | *Professional and Vocational* | | *Language, Literature and Area Studies* | | *Arts other than language* | | *Art and Design Music* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* | *Men* | *Women* |
| 1970–71 | 875 | 1369 | 1624 | 1506 | 26502 | 249 | 11295 | 2085 | 27786 | 4572 | 5962 | 1334 | 459 | 684 | 736 | 692 | 1833 | 1517 |
| 1971–72 | 1435 | 2549 | 2166 | 2305 | 28998 | 331 | 13428 | 2746 | 33411 | 6188 | 7386 | 1982 | 694 | 1047 | 1056 | 1059 | 2464 | 2030 |
| 1972–73 | 1517 | 2550 | 2151 | 2567 | 28602 | 420 | 13450 | 2957 | 34465 | 7197 | 6993 | 2197 | 852 | 1403 | 934 | 943 | 2675 | 2274 |
| 1973–74 | 1661 | 2447 | 2336 | 2866 | 27505 | 487 | 12809 | 2988 | 35647 | 8787 | 7315 | 2478 | 817 | 1492 | 780 | 813 | 2785 | 2483 |
| 1974–75 | 1877 | 2940 | 2405 | 3088 | 28441 | 601 | 12752 | 3321 | 39628 | 11007 | 7682 | 2638 | 919 | 1663 | 567 | 635 | 3029 | 2913 |
| 1975–76 | 4234 | 7730 | 2881 | 3468 | 30581 | 790 | 13180 | 3790 | 43545 | 13311 | 8229 | 3330 | 1109 | 1858 | 500 | 507 | 3322 | 3326 |
| 1976–77 | 5080 | 13278 | 2989 | 4151 | 32542 | 834 | 14469 | 4341 | 45901 | 15689 | 8094 | 3086 | 1231 | 2147 | 572 | 531 | 3662 | 3880 |
| 1977–78 | 6354 | 13298 | 2990 | 4125 | 33744 | 1079 | 15316 | 5142 | 45603 | 17804 | 8082 | 3513 | 1316 | 2485 | 652 | 568 | 3903 | 4274 |
| 1978–79 | 6044 | 11431 | 2912 | 4279 | 35072 | 1067 | 16001 | 5304 | 46402 | 19157 | 8214 | 3741 | 1141 | 2528 | 2264 | 2412 | 4126 | 4621 |
| 1979–80 | 5780 | 10420 | 2747 | 4375 | 35649 | 1267 | 16718 | 6291 | 44067 | 20500 | 8311 | 4078 | 1198 | 2937 | 2368 | 2788 | 4279 | 4897 |
| 1980–81 | 5858 | 9381 | 2453 | 4041 | 36422 | 1379 | 18426 | 8312 | 43730 | 22712 | 8326 | 4179 | 1155 | 3215 | 2706 | 3454 | 4368 | 5267 |
| 1981–82 | 5519 | 8739 | 2634 | 4736 | 37307 | 1655 | 20172 | 9260 | 45127 | 25532 | 8482 | 4409 | 1358 | 3480 | 3139 | 4188 | 4591 | 5800 |
| 1982–83 | 5537 | 8965 | 2585 | 5091 | 37677 | 2080 | 21510 | 9384 | 44679 | 27876 | 8635 | 4837 | 1535 | 4211 | 3476 | 4653 | 4781 | 6515 |
| 1983–84 | 5681 | 9772 | 2698 | 5721 | 37847 | 2396 | 23295 | 10249 | 46297 | 30642 | 8727 | 5332 | 1617 | 4461 | 3666 | 4933 | 5031 | 7054 |
| 1984–85 | 5455 | 10346 | 2713 | 5967 | 37778 | 2677 | 25078 | 11338 | 45502 | 32670 | 8705 | 5619 | 1732 | 2637 | 3127 | 4346 | 5057 | 7314 |
| 1985–86 | 5577 | 11632 | 2520 | 6232 | 37962 | 2908 | 26006 | 11680 | 45924 | 35020 | 8435 | 5713 | 1803 | 5162 | 3172 | 4442 | 5273 | 7338 |
| 1986–87 | 6038 | 12225 | 2559 | 6376 | 39594 | 3693 | 27147 | 12408 | 44072 | 37057 | 7917 | 5869 | 1785 | 5157 | 3468 | 5039 | 5455 | 7592 |
| 1987–88 | 6415 | 13149 | 2301 | 6353 | 40239 | 4212 | 27949 | 13106 | 44723 | 40413 | 8015 | 6225 | 1895 | 5349 | 3524 | 5214 | 5667 | 8052 |

*Source:* DES/DfE Statistics of Education.

*Notes:* 1970 includes 26 polytechnics; 1971–80 includes 30; 1981–88 includes 29 (Wales not included in the published statistics); 1989–90 includes 31; 1991 includes 33.

*Figure 3.9* Students on first degree courses at polytechnics, 1965–66 to 1987–88

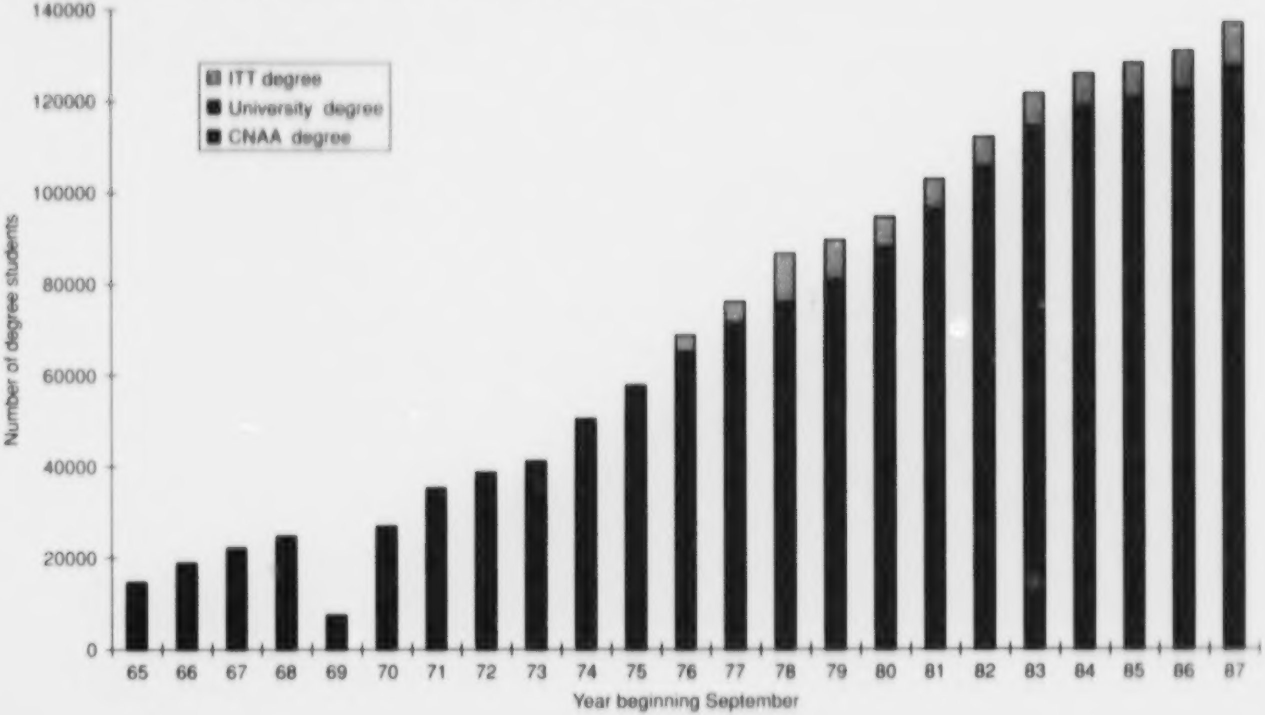


*Figure 3.11* Postgraduate students in polytechnics

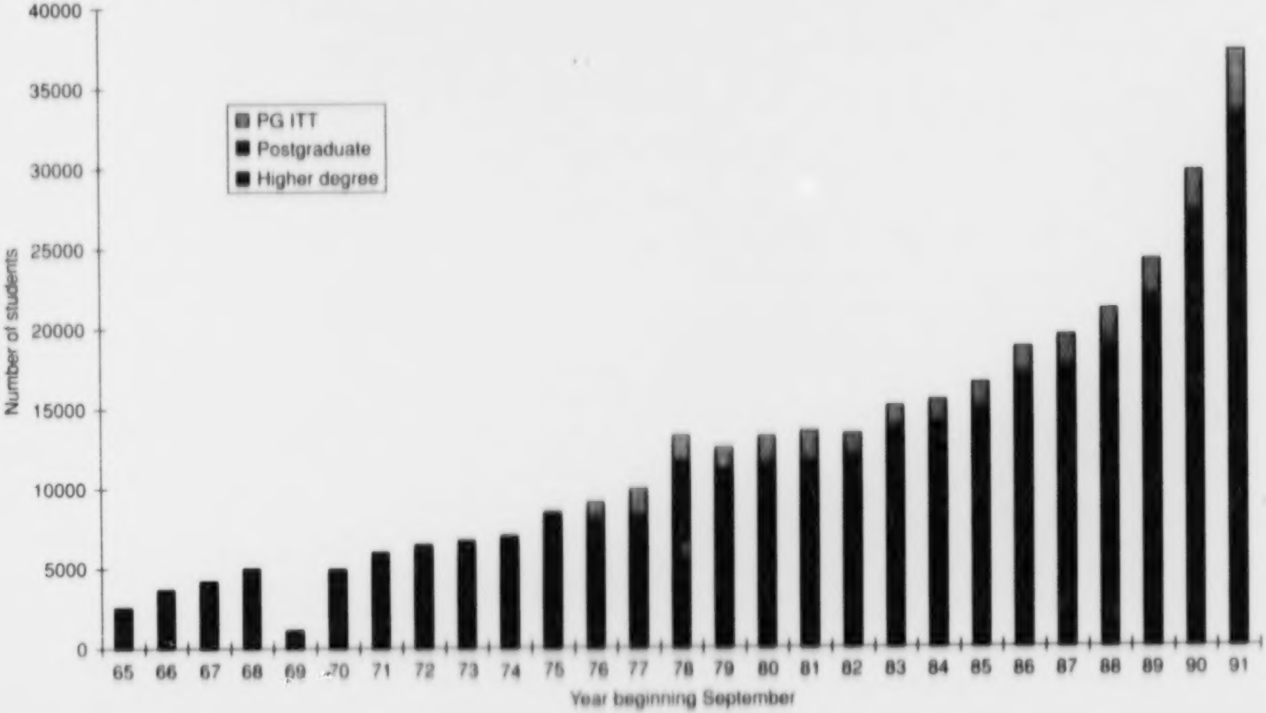
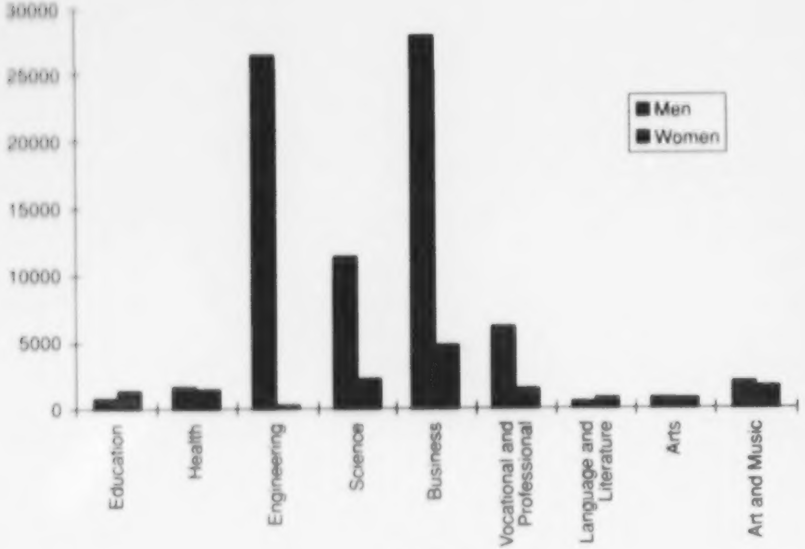
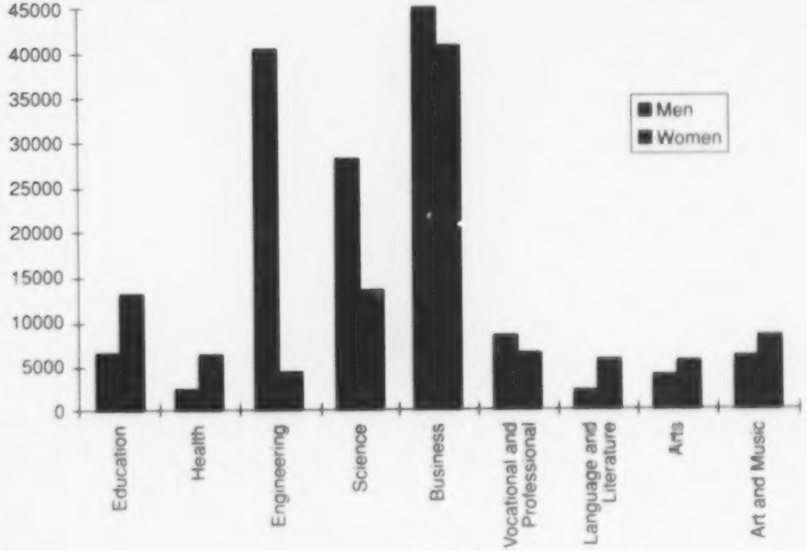


*Figure 3.15* Sex of students on advanced courses in polytechnics by subject of study, 1970–71 and 1987–88



1970–71



1987–88

As other areas of study, notably social sciences and humanities, developed in polytechnics, so more women enrolled. The proportion of women in the student population reflects the changing pattern of courses. As we saw above, in 1965, 44 per cent of advanced students were enrolled on engineering and technology courses. By 1987, only 18 per cent were on such courses, and overall numbers in this subject area had only grown by a quarter. Compare this with the rise in enrolments in education and languages, traditionally taken by a higher proportion of women, where growth of enrolments between 1970 and 1987 exceeded six-fold. Numbers of women on these courses also increased faster than those of men (Table 3.13). It is apparent that the changing nature of course provision in the polytechnics facilitated participation by women. However, it was not just on 'traditional' courses that women flourished. The main growth of numbers of women came in the social sciences, where they increased nearly ten-fold from 1970 to 1987 and perhaps more surprisingly in science, where they increased six-fold. By 1987, women comprised a third of advanced students in science compared with less than a fifth in 1970 (Figure 3.15). Within these broad subject categories, it is evident that there were still disparities in the take-up of subjects by women. For example, while business studies appears attractive to women in general, a study of the part-time business studies course at Middlesex Polytechnic revealed only 6 per cent were women, and that only eight out of 138 graduates over six years in the 1970s were women (Bourner, 1982).

Not only were there few women in the polytechnics in their formative years, they tended to be on non-degree courses. Whitburn *et al.* (1976) found that women students in 1972–73 were more likely than their male colleagues to be on full-time advanced courses other than degrees, and that this was more pronounced for mature women students. Only 12 per cent of mature students were female. They also found that women were more likely to be on full-time courses than part-time. This pattern persisted, but the disparity diminished. In 1970, there were six times as many men as women studying part-time in the polytechnics (Table 3.14). By 1987, there were fewer than 50 per cent more.

The increased access of women to courses in the polytechnics was facilitated by a number of factors, including the social changes of the period. Bryant and Chandler (1985) found that women students entering Plymouth Polytechnic in 1983 were nearly all career minded; only 4.4 per cent of their sample said they would abandon their course on marriage. Policy slowly addressed the issues. In 1984, NAB recognized the need to improve the participation rate by women: 'We believe it is important, particularly in the scientific and technological areas, that the country should seek to use to the full the talents of the whole population, and not just the male half' (NAB, 1984).

One factor to which the polytechnics themselves contributed was the growth of alternative routes into higher education which valued maturity, recognized alternative experience, and accommodated the needs of mature

*Table 3.14* Part-time students in polytechnics by sex

| | *Women* | *Men* |
|---|---|---|
| 1970 | 12065 | 72376 |
| 1971 | 13543 | 74418 |
| 1972 | 14198 | 67963 |
| 1973 | 14405 | 63652 |
| 1974 | 15219 | 60999 |
| 1975 | 16559 | 63342 |
| 1976 | 16357 | 59935 |
| 1977 | 19312 | 61638 |
| 1978 | 21429 | 62672 |
| 1979 | 22741 | 60019 |
| 1980 | 23335 | 58443 |
| 1981 | 23570 | 55202 |
| 1982 | 24724 | 53492 |
| 1983 | 26644 | 54070 |
| 1984 | 28384 | 52430 |
| 1985 | 30783 | 52376 |
| 1986 | 32534 | 51645 |
| 1987 | 35012 | 51946 |

*Source*: DES Statistics of Education.
*Notes*: 1970 includes 26 polytechnics; 1971–80 includes 30; 1981–87 includes 29.

women with families. CNAA degree programmes designed specifically or primarily for mature students (for example at Enfield College in the late 1960s) pre-dated Open University courses, and they and DipHE and Access courses were particularly effective in attracting into higher education women who would not otherwise have had the chance. Studies of early Access courses showed over 70 per cent of students to be women (Millins, 1984) of whom the majority proceeded to higher education. Davies and Yates (1987), following this group through their subsequent degree study, found that 66 per cent of them were women, and 23 per cent men (some did not identify their sex), and that the women were more likely to succeed and less likely to withdraw than the men.

However, gaining access was only part of the story; as important was the extent to which mature women students felt that their education experience, once at a polytechnic, met their expectations and needs. In research drawing on students in three polytechnics and two universities, Edwards (1990) concluded, 'it seems that once more in their lives the women's experience made them feel they did not fit into the education system'. Nevertheless, evidence suggested that women were performing better than men in terms of obtaining 'good' degrees (Hadjimatheou and Rendall, 1986), and when coming from Access courses, less likely to drop out and more likely to succeed, than their male counterparts (Davies and Yates, 1987).

## *Ethnic origins*

In the early surveys of polytechnic students, it is difficult to establish what proportion of the student population came from ethnic minority groups. A survey for the Rampton Report (Rampton, 1981) into the education of children from ethnic minority groups had shown under-representation of students of West Indian origin in all higher education institutions. The report recommended that the DES 'should arrange for the collection of details from all universities, polytechnics and colleges of higher education of the ethnic breakdowns of their student populations, and should examine the reasons for under-representation of any group at any institution' (Rampton, 1981). NAB, in its strategy for the late 1980s, also recognized that there was no statistical basis for ethnic minorities, but stated 'our commitment to a revised principle of access as best serving the needs of individuals and of society convinces us that the public sector should continue to increase the uptake of higher education from these groups' (NAB, 1984).

The need for such a policy was evident from the scant data available. Lyon's (1988) survey at South Bank Polytechnic, for example, found that even under the aegis of ILEA, which had been noted for encouraging institutions to implement policy aimed at improving educational opportunities for educationally disadvantaged groups, Caribbean students were under-represented. Where 14 per cent of secondary school pupils were of Caribbean origin, only 5 per cent of the polytechnic students were. Enrolments of Asian students (10 per cent) reflected the secondary school population (8 per cent). Lyon showed that, taken together, minority group students were more likely to come from further education than directly from school. They were much more likely than white students to be from the immediate locality. Seventy-six per cent of Caribbean students were from the ILEA or outer London area compared to 39 per cent of white students, and on average they were older. Access courses were important in giving Caribbean students entrance to the Polytechnic; 14 per cent had come by this route, compared to 1 per cent of Asian and European students. Caribbean students were less likely to have an A level (45 per cent compared to 72 per cent of Asians and 70 per cent of Europeans).

The significance of Access course entry is demonstrated by the fact that the only courses with over 10 per cent of Caribbean students were those serviced by Access courses (Lyon, 1988). However, in seeking to establish social background, Lyon found that 62 per cent of students of European origin, 47 per cent of Asian origin, and only 35 per cent of Caribbean origin claimed to be from a non-manual background, and concluded that 'it is class bias, as much as race bias that keeps black minorities on the margin of higher education'.

The Polytechnic of North London had set the explicit objective of increasing the number of students from ethnic minority groups. By 1988 it had 30 per cent of all first-year students from these groups, believing this to be the highest percentage of any polytechnic or university (Wagner, 1988). By contrast, in another area with a multi-cultural local population, the Equal Opportunities Unit at Wolverhampton Polytechnic, surveying all students enrolling in 1987 found only 3 per cent were Afro-Caribbean, 8 per cent Asian and 83 per cent of British white origin (Housee *et al.*, 1990). In line with Lyon's findings, at Wolverhampton black students were more likely to be working class, and less likely to have A level or ONC/BTEC qualifications, although they were more likely than their white counterparts to have stayed on at school beyond 16. Black students were significantly more likely to feel school experiences to have been bad (Williams *et al.*, 1988).

The high proportion of black students who were mature raised another possible difficulty in entering higher education. In the Wolverhampton study, more black students reported having had to make more sacrifices, particularly of a financial kind, than white students (Williams *et al.*, 1988). A further danger, of which CNAA was aware, was of institutions accepting prejudices of employers in selecting students for courses with work placements.

It was only in 1990 that data were collected nationally on the ethnicity of applicants to polytechnics and other colleges through the Polytechnics Central Admissions System (PCAS). These showed little change in the remaining two years of the existence of polytechnics, but did reveal that the polytechnics and colleges were offering substantial opportunities to students from ethnic minorities (Table 3.15). Figure 3.16 shows that the polytechnics and colleges in 1990 admitted a higher proportion of ethnic minority students to degree courses than did the universities. Indeed, there may have been discrimination by the polytechnics and colleges in favour of ethnic minorities. There was a higher than proportional percentage of applicants from every category of ethnic minority and there was an at least as great and usually greater proportion admitted than applied (PCAS, 1991a). In 1990, for example, 84 per cent of all admissions were white, compared with 95 per cent of the UK population. The proportion of ethnic minority admissions (16 per cent) exceeded that of the UK population (5 per cent) by three times; ethnic minority admissions to degree courses were slightly lower (14 per cent), and those to HND courses noticeably higher at 21 per cent (PCAS, 1991a). The universities also admitted slightly more students from ethnic minorities than were representative of the UK population, but much less so than the polytechnics and colleges.

## *Age*

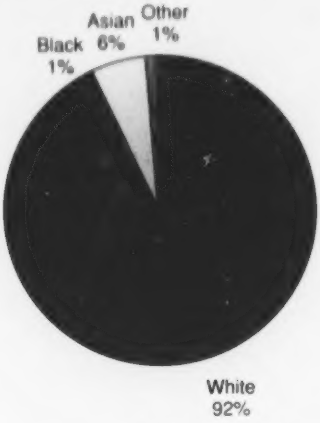
When the 1966 White Paper spoke of 'comprehensive academic communities' it did not specifically refer to students of different ages entering higher education. No more did the Woolwich speech before it. The assumptions of the time were that full-time higher education was the domain of the

*Table 3.15* Ethnic origins of students admitted to degree courses in polytechnics, colleges and universities

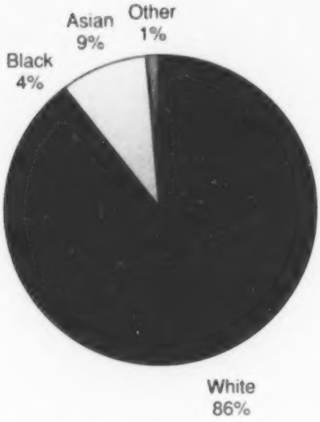
| | *Polytechnics and colleges* | | | | | | | *Universities* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *White* | *Black total* | *Asian total* | *Other* | *Total non-white* | *% of non-white* | *Total* | *White* | *Black* | *Asian* | *Other* | *Total non-white* | *% of non-white* | *Total* |
| 1990 | 42861 | 1906 | 4575 | 673 | 7154 | 14 | 50015 | 89370 | 963 | 5409 | 1204 | 7576 | 8 | 96946 |
| 1991 | 54324 | 2558 | 5550 | 1004 | 9112 | 14 | 63436 | 95467 | 1306 | 6009 | 1293 | 8608 | 8 | 104075 |

*Source:* PCAS Statistical Supplements to the Annual Report; UCCA Statistical Supplements to the Annual Reports.

*Figure 3.16* Ethnic origin of students admitted to universities and degree courses in polytechnics and colleges: 1990



Universities



Degree courses in polytechnics and colleges

18–21-year-old. Insofar as older age groups were accommodated, this was in part-time study. Students under 18 were destined to enter the 'other colleges' of the White Paper rather than polytechnics, as these concentrated on advanced work. The Lancaster speech remedied some of the earlier deficiencies, at least implicitly. Crosland (1967) here spoke of the 'invaluable' further education 'tradition of providing opportunities for educational and social mobility' and of providing a chance for students 'at different levels of ability and attainment'. He referred to those who had left school early and later returned to higher education. Thus, from the outset, the student population of the polytechnics was to include late developers, those who had left school at 15, in other words what later came to be known as the 'mature' student, as well as the traditional 18-year-old. The theme was maintained; in 1988, the Secretary of State told the Chairman of the Polytechnics and Colleges Funding Council that 'polytechnics and colleges have a proud record of opening pathways to higher education for those who would not otherwise have received it' (Baker, 1988). He saw a need for all higher education institutions to emulate this and recruit a wider range of students, many of whom 'will be mature students and will not have the traditional qualifications for entry'.

In the early years, the polytechnics shed large numbers of younger students with their lower level work. About 1,400 full-time and sandwich students and nearly 7,000 part-timers and block release students under 18 were lost between 1965–66 and 1967–68 (Pratt and Burgess, 1974). In the latter year there were still more than 3,200 full-time and sandwich students, over 4,500 part-timers and over 12,600 block release students aged under 18 in the polytechnic colleges.

The pattern of shedding continued, although data are not available until the early 1970s and cease in this form in 1987. By 1971, however, there were fewer than 700 full-time and sandwich students under 18 (Table 3.16). The loss of young part-time students had moderated, with nearly 4,000 still enrolled in 1971. After these initial changes, the numbers of young full-time and sandwich students stayed fairly static; there were still nearly 700 in 1987. But the decline of young part-time students continued, to fewer than 500 in 1987.

These losses were more than countered by expansion of students numbers in other age groups. The 'traditional' student group, aged 18–20, showed the largest growth. There were just under 23,000 full-time and sandwich students in this age group in the constituent colleges in 1965–66. Their numbers increased by nearly four-fold by 1987 to 86,000. Numbers of part-time students in this age group, however, showed a decline. They were relatively few compared to their full-time counterparts. In 1965–66 there were fewer than 1,000 18–20-year-olds on part-time day courses in the constituent colleges, and just under 16,000 on evening-only courses. By 1987 there were fewer than 11,000 on all part-time courses.

The other growth sector, for which the polytechnics became noted, was the older age group, that of 'mature' students.

## *Mature students*

At the time the polytechnic policy was enunciated, the mature student tradition was clearly visible in ages of students in the constituent colleges. Pratt

*Table 3.16* **Students in polytechnics by age and mode of study 1965/6 to 1987/8**

| | *FT and S < 18* | *PT < 18* | *FT and S 18–20* | *PT 18–20* | *FT/S < 21* | *PT < 21* | *FT and S 21+* | *% of FT and S* | *PT 21+* | *% of PT* | *FT and S 25+* | *PT 25+* | *Total FT and S* | *Total PT* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1965–66 | 33458 | 23674 | 22871 | 47499 | 56329 | 71173 | 22177 | 28 | 76215 | 52 | | | 78506 | 147388 |
| 1966–67 | 4032 | 6940 | 26920 | 50208 | 30952 | 57148 | 24479 | 44 | 103743 | 64 | | | 55431 | 160891 |
| 1967–68 | 3253 | 17182 | 30011 | 39680 | 33264 | 56862 | 27841 | 46 | 95920 | 63 | | | 61105 | 152782 |
| 1968–69 | | | No information available | | | | | | | | | | | |
| 1969–70 | 383 | 1636 | 9168 | 5897 | 9551 | 7533 | 7844 | 45 | 16148 | 68 | | | 17395 | 23681 |
| 1970–71 | 795 | 4278 | 27740 | 15373 | 28535 | 19651 | 31092 | 52 | 33979 | 63 | | | 59627 | 53630 |
| 1971–72 | 687 | 3982 | 34323 | 15863 | 35010 | 19845 | 39881 | 53 | 64831 | 77 | | | 74891 | 84676 |
| 1972–73 | 966 | 3352 | 35249 | 14190 | 36215 | 17542 | 40916 | 53 | 64619 | 79 | | | 77131 | 82161 |
| 1973–74 | 545 | 2893 | 35810 | 13785 | 36355 | 16678 | 42292 | 54 | 61379 | 79 | | | 78647 | 78057 |
| 1974–75 | 352 | 1240 | 36734 | 12009 | 37086 | 13249 | 45805 | 55 | 74978 | 85 | | | 82891 | 88227 |
| 1975–76 | 418 | 1035 | 42975 | 12393 | 43393 | 13428 | 54507 | 56 | 66473 | 83 | | | 97900 | 79901 |
| 1976–77 | 324 | 1087 | 47786 | 12704 | 48110 | 13791 | 63380 | 57 | 62746 | 82 | 23110 | 39512 | 134600 | 116049 |
| 1977–78 | 316 | 938 | 51021 | 13417 | 51337 | 14355 | 66660 | 56 | 66595 | 82 | 24363 | 42777 | 142360 | 123727 |
| 1978–79 | 299 | 899 | 51005 | 8956 | 51304 | 9855 | 68783 | 57 | 69641 | 88 | 25030 | 45321 | 145117 | 124817 |
| 1979–80 | 644 | 1064 | 58152 | 14890 | 58796 | 15954 | 61587 | 51 | 66786 | 81 | 23028 | 43410 | 143411 | 126150 |
| 1980–81 | 658 | 761 | 61696 | 14010 | 62354 | 14771 | 62203 | 50 | 67007 | 82 | 22928 | 44504 | 147485 | 126282 |
| 1981–82 | 680 | 699 | 69629 | 13273 | 70309 | 13972 | 64537 | 48 | 64800 | 82 | 23908 | 43619 | 158754 | 122391 |
| 1982–83 | 669 | 596 | 77175 | 12077 | 77844 | 12673 | 64727 | 45 | 65543 | 84 | 23304 | 44922 | 165875 | 123138 |
| 1983–84 | 592 | 542 | 83201 | 11497 | 83793 | 12039 | 67432 | 45 | 68915 | 85 | 23659 | 47698 | 174884 | 128652 |
| 1984–85 | 537 | 549 | 84545 | 10967 | 85082 | 11516 | 70379 | 45 | 69298 | 86 | 23735 | 48384 | 179196 | 129198 |
| 1985–86 | 540 | 507 | 83662 | 10888 | 84202 | 11395 | 73891 | 47 | 71764 | 86 | 24741 | 50567 | 182834 | 133726 |
| 1986–87 | 518 | 485 | 83745 | 10586 | 84263 | 11071 | 78000 | 48 | 73108 | 87 | 26595 | 51577 | 188858 | 135756 |
| 1987–88 | 679 | 462 | 85650 | 10591 | 86329 | 11053 | 82716 | 49 | 75905 | 87 | 28732 | 54371 | 197777 | 141329 |

*Source*: 1965–67, Pratt and Burgess 1974; 1969 onwards, DES/DfE Statistics of Education.
*Notes*: 1969 includes eight polytechnics; 1970 includes 26; 1971–80 includes 30; 1981 onwards includes 29 (Wales excluded).

and Burgess (1974) found that nearly half of both full-time and sandwich students were 21 and over (and 17 and 7 per cent respectively were 25 and over). Nearly three-quarters of part-time students were 21 and over (and 52 and 44 per cent aged 25 and over). The percentages increased slightly to 1967–68, the end of their data series.

National data in subsequent years (Table 3.16) show that the trend to increase the proportion of mature students continued. By 1971, some 53 per cent of full-time and sandwich students were aged 21 and over (Figure 3.17). Numbers in this age group had almost doubled since 1965–66. Amongst part-time students, numbers aged 21 and over dropped to 65,000 by 1971 (Figure 3.17) but they increased by two percentage points to 77 per cent of part-time students.

More detailed information on mature students at about this time is found in Whitburn *et al.* (1976), surveying students in 28 polytechnics. They found 27 per cent of all their sample were aged over 25, though only 11 per cent of those were on degree courses. This led them to conclude that the polytechnics were offering a 'second chance' of degree education. Higher proportions were found on part-time courses (47 per cent) and more professionally or vocationally oriented courses. However there were variations between polytechnics, with one having 44 per cent of students over 25 years old, another only 9 per cent. The London polytechnics on the whole had proportions well above the national figure, an average of 37 per cent. At Plymouth Polytechnic in 1988 only a quarter of students were over 21 on entry (HMI, 1988a).

The numbers of mature students increased as the polytechnics developed. By 1987, the number of full-time and sandwich students aged 21 and over had more than doubled since 1971, to 83,000. Surprisingly, however, as a proportion of the total, they had declined from 53 per cent in 1971 to 49 per cent (Figure 3.17). Their growth had, in fact, been eclipsed by that of 18–20-year-olds (Figure 3.18). Whilst the polytechnics offered an increase in educational opportunity for mature students, this was marginally less than that offered to traditional 18–20-year-olds.

From 1976, it is possible again to disaggregate the data for students aged 25 and over (Table 3.18). These show that this age group constituted 20 per cent of full-time and sandwich students in that year, compared with about 15 per cent in 1965. Numbers had increased considerably, from about 7,300 in 1965 to over 23,000. This growth was not sustained. Numbers hovered around this mark until the mid-1980s and then rose a little to just under 29,000 in 1987. But as a percentage of the total of full-time and sandwich students, those aged 25 and over decreased to 17 per cent.

Amongst part-time students, the picture was slightly different. The numbers of students aged 21 and over increased modestly from 65,000 in 1971 to 76,000 by 1987 (Figure 3.19), but this represented an increase from 77 to 87 per cent of the total. Nevertheless, the total number of part-time students in this age group had now only returned to the number in 1965.

Unlike their full-time and sandwich counterparts, the main growth amongst part-time students was in the 25 and over group. Their numbers grew from

*Figure 3.17* Students in polytechnics aged 21 and over as a percentage of all students by mode of study, 1965–66 to 1987–88

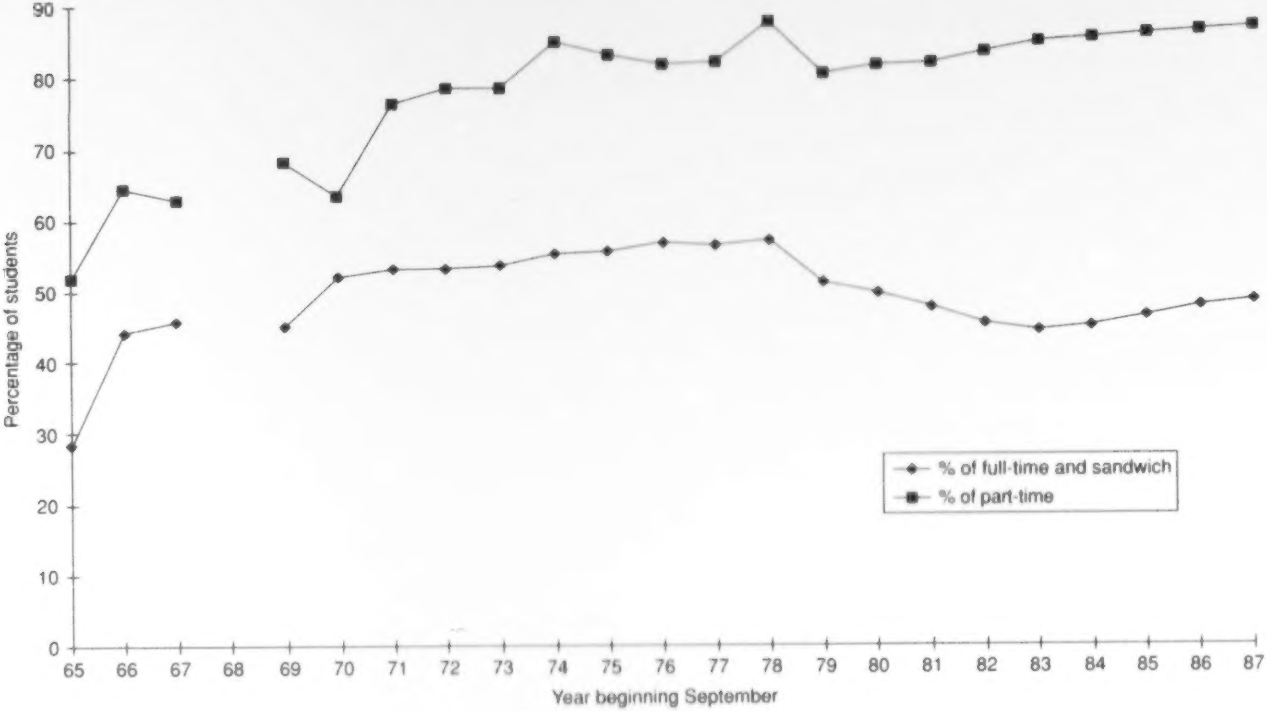


*Figure 3.18* Full-time and sandwich students in polytechnics by age, 1965–66 to 1987–88

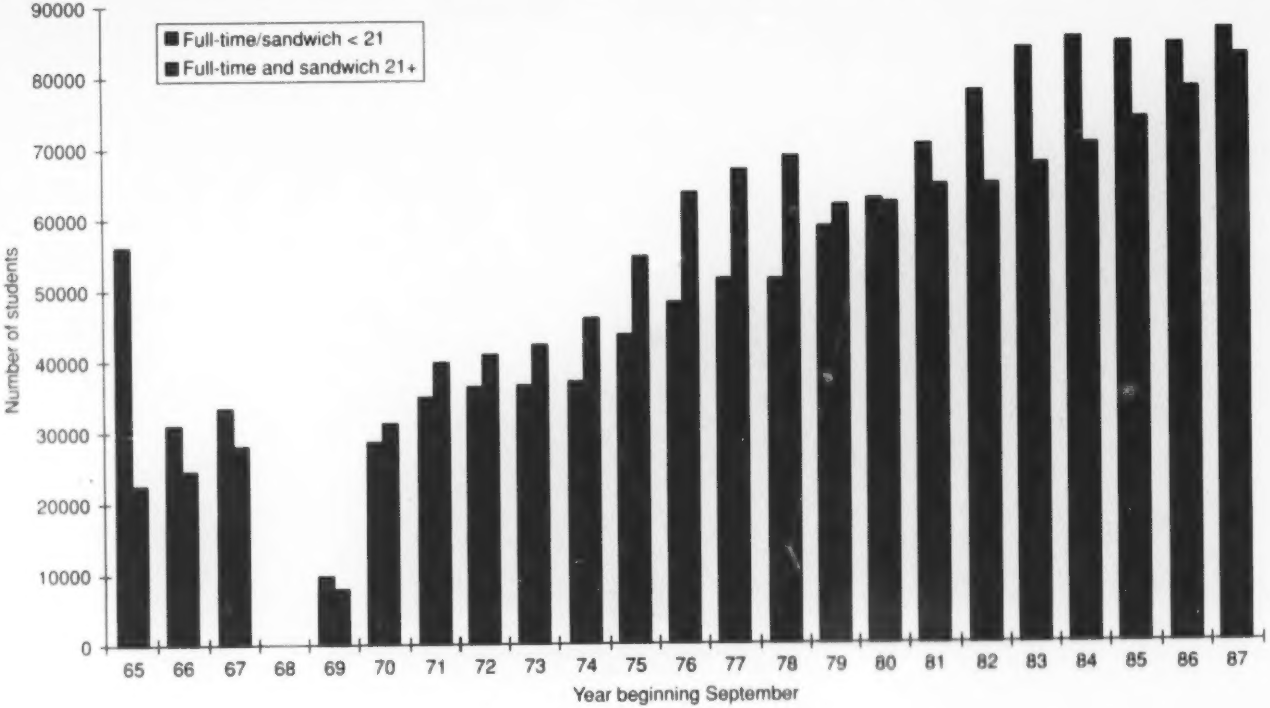


*Figure 3.19* Part-time students in polytechnics by age, 1965–66 to 1987–88

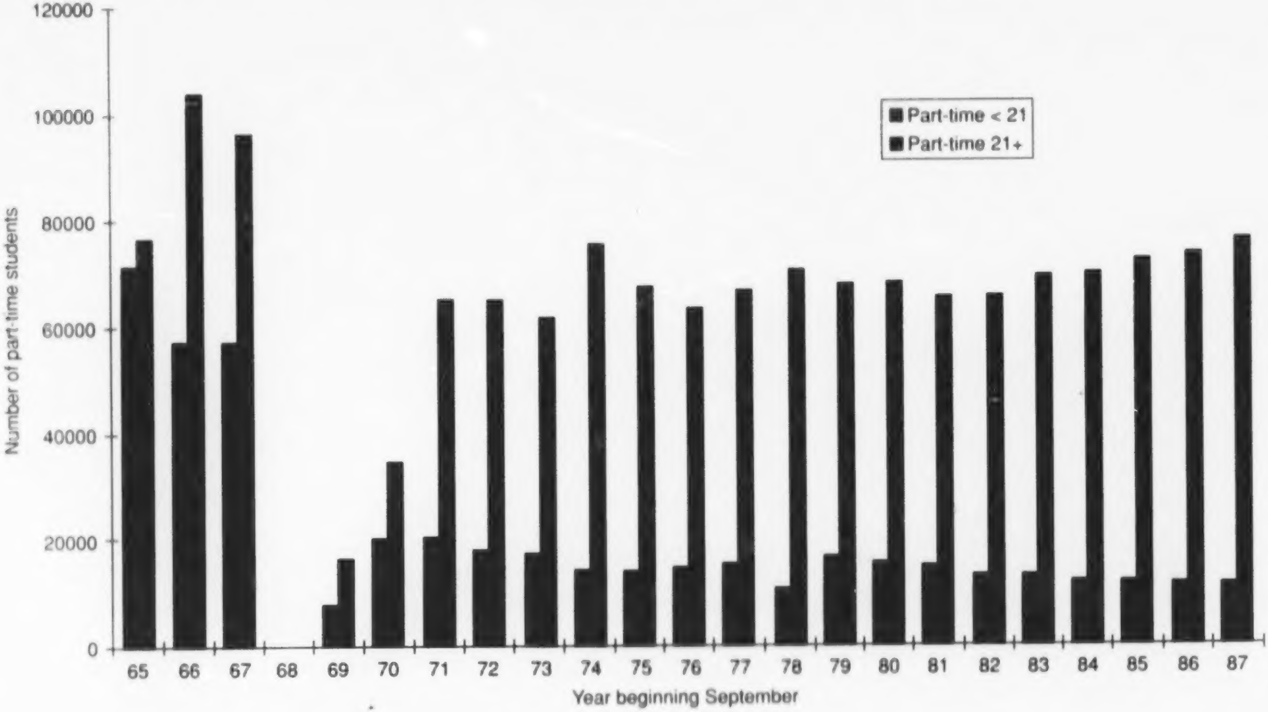


*Table 3.17* First-year mature students in polytechnics and colleges and universities in Great Britain (thousands) 1979–80 to 1992–93

| | *Polytechnics and colleges* | | | *Universities* | | |
|---|---|---|---|---|---|---|
| | *Full-time* | *Part-time* | *Total* | *Full-time* | *Part-time* | *Total* |
| 1979 | 33.1 | 74.4 | 107.5 | 15.7 | 7.8 | 23.5 |
| 1980 | 32.4 | 77.8 | 110.2 | 15.5 | 8.5 | 24.0 |
| 1981 | 35.6 | 79.2 | 114.8 | 15.0 | 9.9 | 24.9 |
| 1982 | 35.6 | 80.7 | 116.3 | 13.9 | 9.6 | 23.5 |
| 1983 | 36.6 | 88.3 | 124.9 | 14.5 | 10.4 | 24.9 |
| 1984 | 36.3 | 88.6 | 124.9 | 15.3 | 11.0 | 26.3 |
| 1985 | 38.9 | 101.2 | 140.1 | 16.2 | 12.0 | 28.2 |
| 1986 | 42.4 | 113.0 | 155.4 | 17.7 | 13.2 | 30.9 |
| 1987 | 44.5 | 111.0 | 155.5 | 17.3 | 13.8 | 31.1 |
| 1988 | 47.4 | 121.1 | 168.5 | 19.2 | 16.0 | 35.2 |
| 1989 | 52.0 | 125.7 | 177.7 | 20.9 | 17.6 | 38.5 |
| 1990 | 58.7 | 135.7 | 194.4 | 22.4 | 20.1 | 42.5 |
| 1991 | 79.8 | 149.3 | 229.1 | 26.2 | 22.9 | 49.1 |
| 1992 | 100.2 | 172.2 | 272.4 | 30.9 | 26.3 | 57.2 |

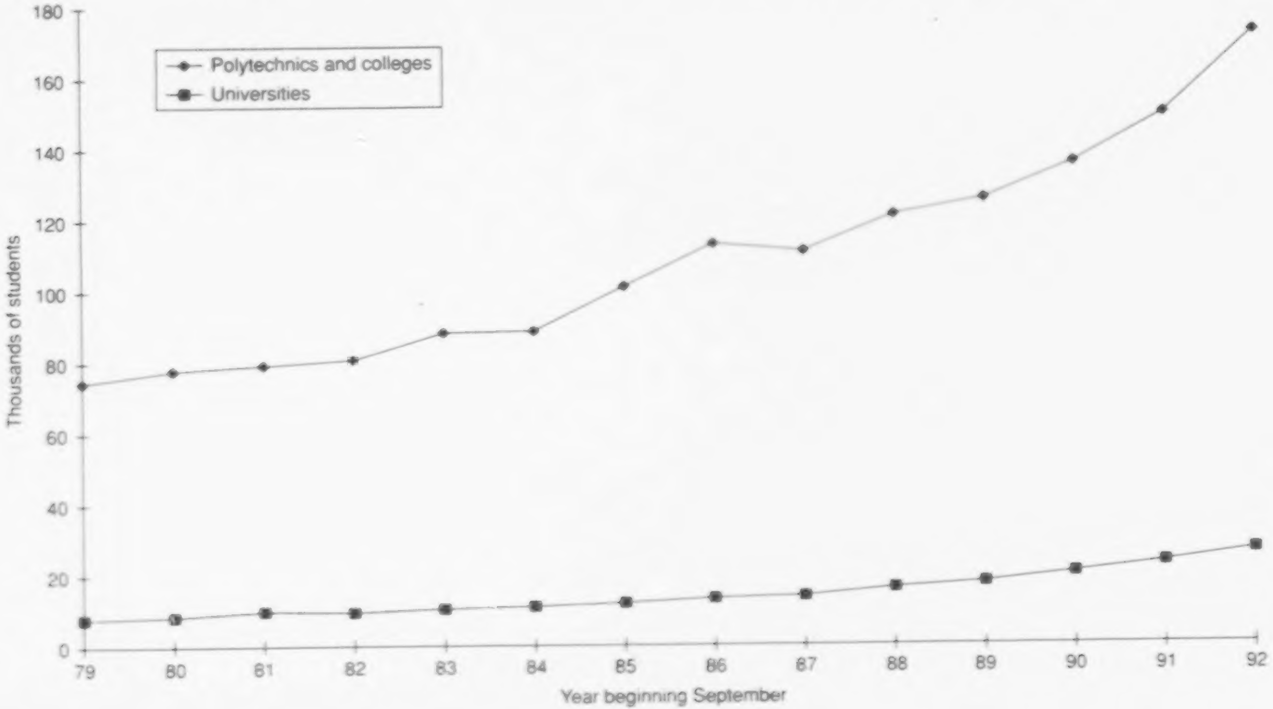
*Source:* DES Statistical Bulletin 11/88; DfE Statistical Bulletin 16/94.
*Notes:* excludes the Open University.

just under 40,000 in 1976 to over 53,000 in 1987 (from 52 per cent of part-time students to 63 per cent).

The importance of the polytechnics as a route for mature students can be seen by comparison with figures for students in universities. Unfortunately, the university data are not collected on the same bases as those for polytechnics, so direct comparisons are hard to make. University data are available for first-year home students rather than enrolments, and comparable figures are available only for the polytechnics and other colleges (in Great Britain) as a group. Other data suggest that about two-thirds of these students were recruited into the English and Welsh polytechnics, so they substantially reflect the situation in the polytechnics.

The data show that, from 1979 when figures become available, the polytechnics and colleges recruited more than twice the number of full-time mature students as the universities, and more than nine times as many part-time mature students (Table 3.17). By 1992, the gap had widened for full-time students to a factor of three (Figure 3.20). More than 100,000 full-time mature first-year students enrolled in the polytechnics and colleges, compared with 31,000 in the universities. The 172,000 part-time mature first-year numbers in the polytechnics and colleges were nearly seven times the 26,000 in the universities (Figure 3.21), though the Open University enrolled a further 18,000 mature first-year first-degree students and 13,000 associate students (DES, 1992). Over the decade, the numbers of full-time mature students in polytechnics and colleges increased by more than twice as much as in the universities. Part-time mature numbers on the other hand

*Figure 3.21* Part-time first-year mature students in polytechnics, colleges and universities, 1979–80 to 1992–93



increased by nearly twice as much in the universities as in the polytechnics and colleges.

These developments meant that by the 1990s, the traditional 18–20-year-old undergraduate was a minority in many of the polytechnics. At the Polytechnic of East London, for example, by 1990 over 65 per cent of the students were over 21, and over 44 per cent over 25 when they first enrolled (Locke and Johnson, 1990). At Plymouth Polytechnic by contrast, only 19 per cent of entrants in 1983 were aged 21 and over.

## *Social class*

The creation of the polytechnics was hailed by many commentators as the driving force in the creation of mass higher education. Donaldson (1971) posited that the model of the 'people's university' implied that a policy ensuring accessibility to the working class had 'been sanctioned by the power structure and institutionalized into the administrative apparatus'. Course provision and structures which suggested recruitment of a higher proportion of working-class students were the emphasis on technological subjects, practical subjects, sandwich elements and part-time study. Admissions policies less rigorous than universities, local recruitment, and an intended preference for working-class applicants should also create the conditions for increased working-class representation (Donaldson, 1971).

The Robbins Report had shown that in the 1960s, the proportion of working-class students in the universities had remained consistent for about 30 years; whereas two-thirds of heads of households were in manual occupations, only a quarter of university undergraduates came from such families. Among the students for whom the polytechnics would increase opportunities for higher education were those from a manual background. It was believed that they were more likely to gain access through sandwich and part-time courses.

How far were the ambitions to increase opportunities for working-class students fulfilled? Data on this issue are limited and national figures are only available for the 1990s. Donaldson reported on a variety of studies in the 1960s and early 1970s in universities and non-university institutions, showing varying percentages of students from working-class backgrounds. In several studies, the polytechnics appeared to have a social class composition similar to the universities, but the studies were limited by low response rates and other methodological problems. There is a further difficulty in determining social class, which becomes more pronounced as students become more mature. These students have often already entered an occupation before commencing their studies, so using conventional indicators such as father's occupation may not be appropriate.

Whitburn *et al.* (1976) found that 60 per cent of their polytechnic students came from a non-manual ('middle-class') background. This percentage concealed wide geographical variations. The polytechnics in the North East averaged 50 per cent from middle-class backgrounds while in London, the

South East and the South West, the figure was over 64 per cent. Comparing their data with findings from university surveys, Whitburn *et al.* concluded that the polytechnics were not succeeding in providing degree-level work for a much broader social spectrum. The proportion of students from manual backgrounds was similar to universities other than Oxbridge. Their research did show that part-time students were more likely to be of working-class origin and they warned that the development of full-time degrees to replace part-time diplomas could have 'repercussions in terms of differential social class appeal'. They concluded, 'The student body continues in the main to come from the middle classes especially on degree course and is particularly so for women on these courses' (Whitburn *et al.*, 1976). Donaldson (1971), surveying all the courses, including the sandwich courses, in what was to become Middlesex Polytechnic, also concluded that it was approaching the university pattern of class composition, and warned against generalizations about the association of sandwich courses with high proportions of working-class students. Overall he found no institutional policy to make the polytechnics more accessible to the working class.

Boys' survey of final-year undergraduates in 1982 found 25 per cent came from a manual background, compared to 16 per cent of his university sample. In applied social science/sociology, there were over a third of working-class students. He also found that a higher proportion of working-class students had not attempted to enter a university when compared to those in other classes (Boys, 1984).

Social class composition was clearly dependent on the institution. Bryant and Chandler (1985) found that the 1983 intake to degree courses at Plymouth Polytechnic was dominated by middle-class students: 76 per cent had a non-manual background. Working-class students accounted for only 5 per cent. Lyon's survey of the student population at South Bank Polytechnic in the 1980s shows higher figures for working-class students, but suggests that little had changed in terms of bringing in more working-class students; only 19 per cent of European students came from manual backgrounds, rising to 30 per cent for Caribbean students (Lyon, 1988). A study of mature students at Wolverhampton Polytechic found that the majority of mature students were middle class in origin, and that entrants from Access courses were no more likely to be working class than those from other routes (Williams *et al.*, 1988). This appears to contradict Millins' (1984) finding that Access courses were highly successful in enrolling students from social classes III and IV, although in this study of the early Access courses over 70 per cent were in the ILEA area, and over half the students were of Caribbean origin. In Wolverhampton, black students were more likely to be working-class than white (Williams *et al.*, 1988).

It was expected that part-time students were more likely to be of working-class origins than full-time students. However, Bourner (1982) found that, while nearly half had parents in manual occupations, by the time they came to part-time degree study they themselves were largely (92 per cent) in non-manual occupations. Reviewing five years of the evening degree scheme at the Polytechnic of North London, Johnson and Hall (1985) found that fewer than 2 per cent of students were classed as manual workers. Unfortunately, when the PCFC, as part of its commitment to widening access, asked institutions to give information on the socio-economic background of students, only one institution provided it, many referring to the unreliability of using parental occupation as a determinant (Allan, 1992). In 1990 Roberts and Higgins found that polytechnic students were more likely to come from families without a tradition of higher education, only 35 per cent having at least one parent with a degree, compared to 47 per cent of university students (Roberts and Higgins, 1992).

When national data through the central admissions system were eventually collected, they offered more definitive evidence of the polytechnics' achievement. On full-time degree courses, 28 per cent of admissions in 1991 were from manual backgrounds (Table 3.18), an apparently modest figure, comparable with that of the universities at the time of the Robbins Report. HND course admissions showed a slightly higher percentage from manual backgrounds (33 per cent). However, data for admissions to the universities in the same year show that only 19 per cent came from manual backgrounds (Figure 3.22).

It would appear that the polytechnics can claim to have made progress towards the aim of widening access to higher education of working-class students. The early prognostication that the polytechnics, as they moved towards more advanced work and full-time courses, would do little to alter the class participation in higher education has not been wholly borne out. However, the representation of students from a manual background is still below that of the population as a whole. Much of the contribution to increased access for these students was through part-time and non-degree courses, and it is likely that the polytechnics' concentration on degree courses diminished their contribution. It is also clear that some polytechnics made more significant contributions than others.

## *The part-time route*

We have seen how the polytechnics initially responded to the opportunities presented by the policies of the 1960s by decreasing their commitment to part-time education. Later they retrieved the position, but the issue of the part-time route remained controversial. The polytechnics defended their reduction in numbers of part-time students by pointing out that numbers on HNC courses were declining generally (Lindop, 1974), as if it were nothing to do with them. They received support for this view from the government. A DES discussion paper (DES, 1978) claimed that 'there is little evidence of unsatisfied demand' for part-time advanced provision in the maintained sector. Later however, NAB (1984) stated its belief that the projected student numbers took insufficient account of the managed nature of

*Table 3.18* Admissions to polytechnics and colleges by social class, 1991

| | *Men* | *% of men* | *Women* | *% of women* | *Total* | *% of total* |
|---|---|---|---|---|---|---|
| *Degree course* | | | | | | |
| I Professional | 3469 | 13 | 3012 | 12 | 6481 | 12 |
| II Intermediate | 12696 | 46 | 11861 | 48 | 24557 | 47 |
| III Skilled non-manual | 3447 | 12 | 3397 | 14 | 6844 | 13 |
| III Skilled manual | 4914 | 18 | 4021 | 16 | 8935 | 17 |
| IV Partly skilled | 2703 | 10 | 2242 | 9 | 4945 | 9 |
| V Unskilled | 506 | 2 | 354 | 1 | 860 | 2 |
| Total | 27735 | 100 | 24887 | 100 | 52622 | 100 |
| *HND* | | | | | | |
| I Professional | 992 | 11 | 477 | 9 | 1469 | 10 |
| II Intermediate | 3937 | 43 | 2319 | 44 | 6256 | 43 |
| III Skilled non-manual | 1122 | 12 | 744 | 14 | 1866 | 13 |
| III Skilled manual | 1915 | 21 | 1033 | 20 | 2948 | 20 |
| IV Partly skilled | 1040 | 11 | 544 | 10 | 1584 | 11 |
| V Unskilled | 225 | 2 | 102 | 2 | 327 | 2 |
| Total | 9231 | 100 | 5219 | 100 | 14450 | 100 |
| *Degree and HND* | | | | | | |
| I Professional | 4461 | 12 | 3489 | 12 | 7950 | 12 |
| II Intermediate | 16633 | 45 | 14180 | 47 | 30813 | 46 |
| III Skilled non-manual | 4569 | 12 | 4141 | 14 | 8710 | 13 |
| III Skilled manual | 6829 | 18 | 5054 | 17 | 11883 | 18 |
| IV Partly skilled | 3743 | 10 | 2786 | 9 | 6529 | 10 |
| V Unskilled | 731 | 2 | 456 | 2 | 1187 | 2 |
| Total | 36966 | 100 | 30106 | 100 | 67072 | 100 |

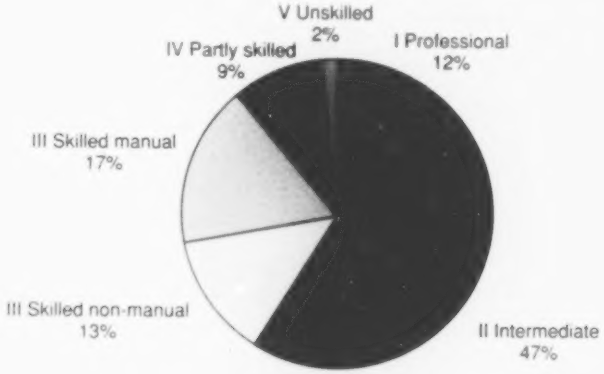
*Source*: PCAS Statistical Supplement 1990–91.

the demand, and adopted therefore a policy of protecting part-time provision numbers and encouraging provision through the allocation of resources. Bourner *et al.* (1988) pointed to the increase in students on part-time degree courses as course provision increased.

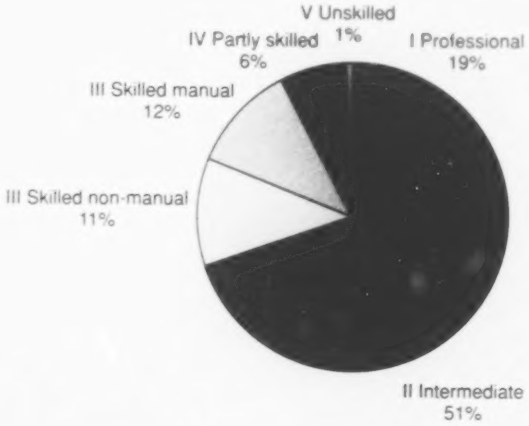
The position was complicated by the emergence of the Open University in the 1970s. This came to dominate the part-time first-degree sector, with, in 1984, two-thirds of all students (Tight, 1991). The polytechnics and colleges came second, with just over a quarter; the universities had only 6 per cent.

At the start of the 1970s, only 8 per cent of all CNAA undergraduate courses were part-time. By the early 1980s this had risen to 20 per cent. The polytechnics dominated this provision, with over 80 per cent of these courses. Most other colleges offered none, but one, Humberside College of Higher

*Figure 3.22* Social class of entrants to polytechnics, colleges and universities in 1991



Degree course admissions to polytechnics and colleges



Accepted applicants to universities

Education, offered 10, reflecting perhaps its long-standing ambitions to polytechnic status (Bourner *et al.*, 1988).

The binary policy suggested that part-time education offered a route to higher education for different kinds of students from those entering full-time study. So what were the students on these courses like? Did they differ significantly from those on full-time courses? The data suggest they were older, more working class, with high qualifications on entry to degree courses and high achievements on them.

Whitburn *et al.* (1976) found that part-time non-degree polytechnic students in 1972 had a median age of 24.6 compared with 21.1 for full- and part-time degree students, and 21.6 for other full-time students. Bourner *et al.* (1988) surveyed over 4,000 part-time undergraduates on CNAA degrees in 1986. They found that the average age was 30, and that nearly two-thirds were male. Most were married and in paid employment. Part-timers in polytechnics contrasted with those at the Open University, where there were more women, who were older and less likely to be in employment (Bourner *et al.*, 1988). The two sets of institutions appeared to be meeting different needs.

Other surveys show variations on the theme. In the Polytechnic of North London (PNL) degree scheme the average age was 32, though just over half of students were women, and a quarter were unemployed on enrolment (Johnson and Hall, 1985). A study of part-time business study degree students at Middlesex Polytechnic found an average age of 34, though only 6 per cent were women (Bourner, 1982).

Whitburn *et al.* (1976) found that 34 per cent of part-time non-degree students in 1972 came from a working-class background. However, in rating their own class, only 17 per cent considered themselves to be working class at the beginning of their study. Bourner *et al.* (1988) found that most students on CNAA part-time degrees had parents who had left school at 15, and nearly half had parents in manual occupations. In contrast, 92 per cent of the respondents themselves were in non-manual occupations, evidence of a process of upward socio-economic mobility. The majority had left school before they were 18, nearly half leaving at 16 or younger. The overall picture is of leaving school early, but with a high incidence of post-school education. While many had proceeded to some other form of full-time study, 38 per cent had completed full-time education before they were 18. Almost two-thirds had undertaken some form of part-time study before enrolling on the part-time degree, and for most this had been recent. Over 30 per cent had experience of studying at the same college where they were pursuing their degree, maintaining the tradition of the 'seamless robe' in the further education sector.

Most of the students had already attained relatively high educational qualifications; the majority had BTEC Higher awards, or equivalent. In general they were better qualified than mature students on full-time degree courses, although less likely to have the conventional degree entry requirements than their Open University counterparts (Bourner *et al.*, 1988). The students in the PNL survey were also well qualified, 23 per cent possessing degrees or part-degrees, and 23 per cent having post-A level diplomas or professional qualifications (Johnson and Hall, 1985). Whitburn *et al.* (1976) found that part-time students were less likely to have two A levels (28 per cent) than full-time students, but more likely to have non-A level qualifications (68 per cent).

Bourner (1982) found that the part-time students on the business studies degree at Middlesex Polytechnic were more likely than full-time students to get 'good' degrees (45 per cent compared to 30 per cent) although they took the same examination papers, with the same external examiners.

## *Applications, admission and entry qualifications*

One of the key features of the 'service' tradition was its 'openness' to students seeking a second chance to enter higher education, including those without formal entry qualifications. Brennan (1989) identified four ideologies of admissions: the commonest is 'quality and reputation', which means attracting the 'best' students, normally 18-year-olds with high GCE A level grades as an indicator of the department's standing; 'equity', ensuring that the admissions process is fair, again using A level grades as a measure of ability and diligence; the 'social engineering' ideology, which involves a conscious attempt to change higher education participation to be more representative of the wider society; and 'shortage of students' which is less an ideology than a pragmatic approach to filling courses.

The situation for the polytechnics was complicated. All of these approaches to their recruitment and admission of students could be found, even in a single institution. On the one hand their standing in the world of higher education, and with potential students, was generally seen as reflected in the quality of their applicants. On the other hand, they needed to recruit students in line with the goals of expansion. They faced competition in this with the better known and higher status universities, to whom qualified students preferred to apply. The recruitment of students with poor A level grades or without traditional qualifications, whilst in line with aspects of policy, could diminish academic status. In the late 1970s, as planners became aware of impending demographic changes as the number of 18-year-olds in the population started to fall and the DES predicted that the age participation rate would remain static, the polytechnics would be in increased competition for the dwindling pool, and would need to look to other groups of students to fill their places. By the early 1980s it was becoming clear that some institutions had a major interest in removing barriers to access for those likely to benefit but who had not acquired conventional qualifications, while others were devoting their energy and resources elsewhere, catering for the needs of the growing numbers of qualified 18-year-olds in the system.

There were formal constraints, too. The courses that polytechnics offered under the aegis of the CNAA had to be of comparable standard with those in universities, which meant that the CNAA's regulations specified a normal minimum entry requirement similar to that of the universities (broadly two GCE A levels). One of the major debates throughout the history of the polytechnics concerned entry to degree courses. Central to the debate was the CNAA, both through its principles and guidelines, and through the behaviour of its officers and subject panels.

Although obliged by its Charter to ensure comparability of its awards with university degrees, the CNAA regulations offered provison for qualifications other than two A levels to be considered as equivalent. Amongst the most important of these were the traditional further educational qualifications of ONC/OND 'at a good standard' (CNAA, 1965). From its early days, CNAA made clear that 'the prime consideration of recruitment to a course is whether the student is likely to pursue the course successfully' (CNAA, 1965) and there was also provision for the admittance of mature students who were likely not to have A levels. CNAA was persuaded that 'mature' meant 21 plus, not 25 plus. The 1979 guidelines included provision for mature unqualified students as 'non-standard'. In validation of provision such as the new DipHE courses in the mid-1970s, it had been seen to welcome mature students, and to cautiously allow entry of limited numbers of 'exceptional' students under 21 without regular qualifications. It appears that CNAA's guideline limitation of 10 per cent of exceptional students on North East London Polytechnic's innovative DipHE by Independent Study passed into general folklore, and Evans (1984) found admissions tutors believing this applied to all non-standard intake, justifying caution. Experience of CNAA working parties also reinforced a cautious approach (Evans, 1984). As the policy climate changed in the mid-1980s, with both government and NAB welcoming the move to more open access, the CNAA confirmed that students could be admitted to courses if there was a reasonable expectation that they would be able to attain the standard appropriate for the award, and also that they should be given the opportunity to reach the highest award of which they are capable (Farthing, 1986). In 1988 new regulations appeared which omitted the general entry requirement and definition of students as standard and non-standard, replacing them by course entry requirements in terms of knowledge and skills required. A levels were to be used as a benchmark. These regulations were also more flexible about entry with advanced standing, through recognition of other courses of study and accreditation of prior experience and learning (APEL).

Despite the constraints of the CNAA's Charter, the open tradition was visible in the early years of the polytechnics. Whitburn *et al.* (1976) showed 82 per cent of all degree students having two A levels, but 26 per cent possessing other qualifications including ONC/OND, HNC/HND and teaching certificates. The survey does not enable us to distinguish students admitted without A levels. Other data show that the extent of admission of students with non-traditional qualifications varied between institutions and subject of study. Only 14 per cent of all entrants to Plymouth Polytechnic in 1983 were alternatively qualified (Bryant and Chandler, 1985), but 42 per cent entering mechanical engineering were: 67 per cent had been in further education previously, compared with only 16 per cent of biologists.

However, Whitburn *et al.* (1976) revealed that while the polytechnics were admitting mature students in 1972–73, virtually all of these possessed the necessary A levels or equivalent qualifications for entry. For some these would have been gained at school; others had attained their qualifications later in life. The two A level requirement continued to be the barrier for access to higher education, whether one was 18 or mature. A study of mature students at Sheffield Polytechnic revealed that only 2 per cent of them had no formal qualifications (Turner, 1981).

The flexible entry tradition was, nevertheless, maintained. In 1988, Fulton and Ellwood interviewed admissions officers and tutors throughout higher education. In the polytechnic sector they found most admissions officers sympathetic to non-traditional applicants, and six of their sample of nine polytechnics had admissions policies designed to deliver wider recruitment. However, in spite of these stated intentions, they found many admissions tutors were congratulating themselves on rising A level points scores and that because funding mechanisms led to a desire to get the right numbers, the use of A level points as an entry qualification enabled them to manage the demand (Fulton and Ellwood, 1989).

The creation of a central admissions service for polytechnics and other colleges in 1984 marked a significant corporate step by the polytechnics to increase their ability to compete in the A level 'market' and to pursue Brennan's 'quality and reputation' strategy. Until then, students applied to individual polytechnics for admission to all courses. From 1986, applications for full-time and sandwich degree and DipHE courses to the 30 polytechnics in England and Wales were dealt with through PCAS. Later, PCAS covered HND courses and 34 colleges of higher education. PCAS operated on a similar basis to the long-established Universities Central Council on Admissions (UCCA), with applicants limited to four applications. Applications for teacher education and art courses in polytechnics were made through separate systems, and those for courses not covered by PCAS or UCCA direct to the institutions.

The PCAS system ran parallel with that of UCCA, so applicants could apply through both systems simultaneously. Thus in 1986–87 (when PCAS covered only polytechnics), 139,000 students applied through PCAS for places in polytechnics, 179,000 through UCCA and 80,000 applied through both systems (Pratt, 1989a).

The problems of competing in the 'student market' were evident in A level points scores. Generally, students in polytechnics had lower scores than those in universities. Boys (1984) found that of those with A levels, 57 per cent of polytechnic students had only 1–5 points, compared to 7 per cent of university students. At the top end, 17 per cent of university students had over 16 points compared to under 1 per cent of polytechnic students. Polytechnic students were also less likely to have two A levels (75 to 95 per cent). PCAS (1991b) found that polytechnics and their potential entrants were not helped by schools' and colleges' predictions of their A level grades: only about one-third of grades were predicted correctly.

National data through the central admissions system for polytechnics became available in 1988 (Table 3.19). They confirm the extent to which polytechnics maintained the open entry tradition. In 1988–89, only 56 per cent of entrants to first-degree courses had A level qualifications; 10 per cent had ONC/OND and another 8 per cent had HNC/HND. The open tradition was, if anything, strengthened in subsequent years. By 1991–92,

*Table 3.19* Qualifications of entrants to first degree courses in polytechnics, 1988–89 to 1991–92

| | *1988–89* | | *1989–90* | | *1990–91* | | *1991–92* | |
|---|---|---|---|---|---|---|---|---|
| | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* |
| Access | 1141 | 2.4 | 1878 | 3.0 | 2238 | 3.0 | 3329 | 3.4 |
| Prof. and Tech. | 919 | 2.0 | 1167 | 1.9 | 1488 | 2.0 | 2018 | 2.1 |
| 3+ A Levels | 15815 | 33.9 | 22095 | 35.2 | 25590 | 33.8 | 29922 | 30.5 |
| 2+ A Levels | 10391 | 22.3 | 13131 | 20.9 | 14714 | 19.4 | 16718 | 17.0 |
| HNC and HND | 3587 | 7.7 | 5200 | 8.3 | 6307 | 8.3 | 8793 | 9.0 |
| ONC and OND | 4567 | 9.8 | 5972 | 9.5 | 7201 | 9.5 | 9923 | 10.1 |
| Other | 8202 | 17.6 | 10670 | 17.0 | 14801 | 19.6 | 20562 | 20.9 |
| No Qualification | 1986 | 4.3 | 2578 | 4.1 | 3359 | 4.4 | 6034 | 6.1 |
| Total | 46608 | 100.0 | 62691 | 100.0 | 75698 | 100.0 | 98210 | 100.0 |

*Source:* DES/DfE Statistics of Education.
*Note:* Based on students whose entry qualifications were provided. 1988 includes 29 polytechnics; 1989–90 includes 31; 1991 includes 33.

*Table 3.20* Qualifications of UK entrants to university undergraduate courses

| | *1988–89* | | *1989–90* | | *1990–91* | | *1991–92* | |
|---|---|---|---|---|---|---|---|---|
| | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* |
| 3+ A Levels | 52484 | 69.3 | 57252 | 69.2 | 59993 | 69.8 | 64472 | 69.0 |
| 2+ A levels | 2486 | 3.3 | 2637 | 3.2 | 2874 | 3.3 | 3042 | 3.3 |
| 5+ SHG | 5707 | 7.5 | 5839 | 7.1 | 5703 | 6.6 | 5937 | 6.4 |
| 3/4 SHG | 1081 | 1.4 | 1998 | 2.4 | 1046 | 1.2 | 1227 | 1.3 |
| HNC/HND/ ONC/OND | 2958 | 3.9 | 3302 | 4.0 | 3031 | 3.5 | 3919 | 4.2 |
| Other | 11021 | 14.6 | 12706 | 15.4 | 13362 | 15.5 | 14859 | 15.9 |
| Total | 75737 | 100.0 | 82744 | 100.0 | 86009 | 100.0 | 93456 | 100.0 |

*Source:* USR University Statistics.

those entering with A levels had dropped to less than half the total at 48 per cent. Some 6 per cent were admitted with no formal qualifications at all. This contrasted with admissions to the universities (Table 3.20), where about 80 per cent had A levels or Scottish Highers (the numbers with Scottish qualifications in polytechnics were less than 1 per cent). Only 4 per cent entered with National Certificates at either Ordinary or National level.

The data also confirm the disparity in A level entry qualifications between the polytechnics and the universities (Figure 3.23). Whereas almost 70 per cent of university entrants had three or more A levels, the figure for the polytechnics was between 30 and 35 per cent. Only 3 per cent of university students entered with two A levels, compared with 17 per cent in polytechnics

*Figure 3.23* Qualifications of entrants to first-degree courses, 1988–89 and 1991–92

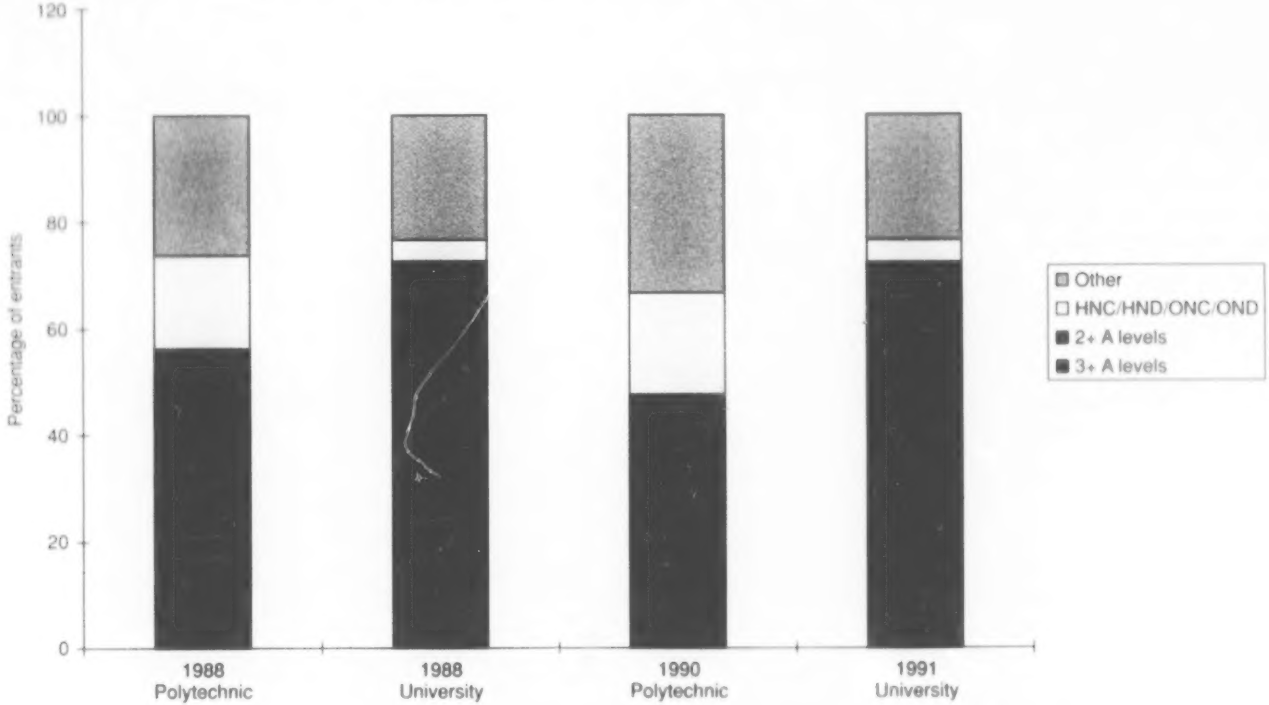


*Table 3.21* Average A level points score of entrants to first degrees in polytechnics, 1989–90 to 1991–92

| | *Male* | | *Female* | |
|---|---|---|---|---|
| | *IT* | *First degree* | *IT* | *First degree* |
| 1989–90 | 10.2 | 12.7 | 10.5 | 13.4 |
| 1990–91 | 10.3 | 12.9 | 12.8 | 13.5 |
| 1991–92 | 9.9 | 13 | 10.1 | 13.5 |

*Source*: DES/DfE Statistics of Education.

*Table 3.22* Average scores of entrants to undergraduate courses in universities

| | *A levels* | *SHG* |
|---|---|---|
| 1989–90 | 22.3 | 10.6 |
| 1990–91 | 22.4 | 10.5 |
| 1991–92 | 22.3 | 10.9 |

*Source*: USR University Statistics.

in 1991–92, a figure which had declined from 22 per cent in 1988–89. Data on A level scores confirm that entrants to universities had higher grades (Tables 3.21 and 3.22). The average A level score was over 22, compared with around 12 in the polytechnics (the data are not collected on precisely comparable bases).

It was clear that many students applying to the polytechnics did so as a second best. Whitburn *et al.* (1976) found that for half of their sample of degree students, a polytechnic place was a second-best substitute for a university place, although 21 per cent of all full-time students felt that this was the best place for their course. Part-time students came to the polytechnic because they had been influenced by employer sponsorship (21 per cent), or because it was the only place to offer the course of their choice (25 per cent). Boys (1984) found that many 18-year-olds who came straight from school to the polytechnics would have preferred to be at university. This was not so of older students: over half the students over 25 had not applied to a university (Boys, 1984). On the other hand, different considerations motivated many of them. Bryant and Chandler (1985) found that 11 per cent of older students had been unemployed for more than three months, and that they were often motivated by redundancy to re-enter education to improve job performance.

Research by Keen and Higgins (*c.* 1990) suggested further problems for polytechnics competing in the student market. It showed that 16–19-year-olds in schools and colleges were less well informed about the polytechnics

*Figure 3.20* Full-time first-year mature students in polytechnics, colleges and universities, 1979–80 to 1992–93

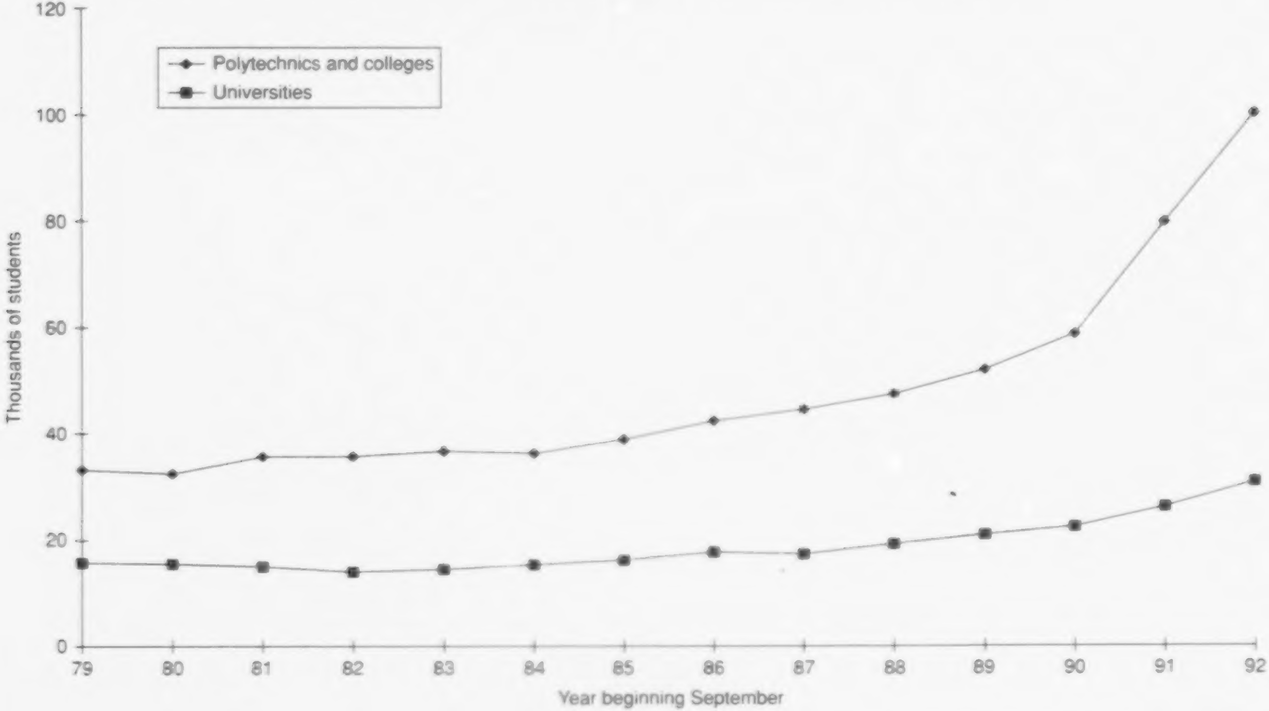


*Table 3.23* Region of domicile of students admitted to polytechnics, year of entry: 1986

| *Region of admitting polytechnic* | *Northern and Yorks* % | *North West* % | *East Midlands* % | *West Midlands* % | *East Anglia* % | *Greater London* % | *South East* % | *South West* % | *Wales* % | *Scotland* % | *Northern Ireland* % | *UK N/K* % | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northern and Yorks | 40.0 | 17.4 | 8.5 | 7.0 | 2.8 | 5.0 | 10.7 | 3.4 | 2.4 | 1.1 | 1.7 | 0.0 | 6067 |
| North West | 14.6 | 40.7 | 5.9 | 7.9 | 1.8 | 6.6 | 10.4 | 3.6 | 4.2 | 0.6 | 3.6 | 0.0 | 4213 |
| East Midlands | 16.2 | 12.9 | 17.9 | 11.2 | 4.8 | 7.4 | 17.5 | 6.5 | 3.9 | 0.6 | 1.2 | 0.0 | 2887 |
| West Midlands | 13.4 | 14.6 | 8.5 | 28.5 | 1.8 | 5.9 | 13.5 | 6.8 | 5.4 | 0.3 | 1.3 | 0.0 | 4867 |
| South East | 6.3 | 5.3 | 4.6 | 6.0 | 3.2 | 28.6 | 30.9 | 9.5 | 3.8 | 0.6 | 1.1 | 0.1 | 14197 |
| South West | 5.0 | 6.2 | 6.0 | 10.1 | 2.9 | 7.3 | 25.8 | 26.2 | 8.8 | 0.8 | 0.8 | 0.0 | 2458 |
| Wales | 5.7 | 6.0 | 3.5 | 8.1 | 1.5 | 7.1 | 17.7 | 11.5 | 37.4 | 0.1 | 1.5 | 0.0 | 934 |
| Total admitted | 14.7 | 13.5 | 7.1 | 10.2 | 2.8 | 15.1 | 20.9 | 8.4 | 5.1 | 0.7 | 1.5 | 0.1 | 35623 |

*Source*: PCAS Statistical Supplement 1985–86.

than about the universities (and even worse about other colleges). The esteem in which polytechnics were held appeared to be diminished by this, and there was particular ignorance about HND courses. The findings suggested that polytechnic degree courses could seem 'unnecessarily inaccessible' to non-traditional students.

It was also clear that many students simply attended their local polytechnic, often because of their own immobility: 14 per cent of full-time and 23 per cent of part-time students cited 'ease of travel' as a reason for their choice of their polytechnic (Whitburn *et al.*, 1976). In this sense, of course, the polytechnics were seen to be responsive to the needs of local people. As a result, in 1972, 26 per cent of polytechnic students on degree courses were living at home, either with their parents or in their own home, compared to 12 per cent of university students. Over half the students in the North West and South West, including Wales, and nearly half in the North East went to a polytechnic in their home areas (Whitburn *et al.*, 1976). Locke (1978) found that 48 per cent of full-time and sandwich students at North East London Polytechnic in 1975 came from a limited hinterland (London, Essex and Hertfordshire). Boys (1984) found that nearly two-thirds of polytechnics had over 40 per cent of students living within 50 miles, compared to 17 per cent in the universities. This confirmed findings by Walker *et al.* (1979) at Lanchester (Coventry) Polytechnic where 28 per cent of students came from the West Midlands, double the figure at the local university. Roberts and Higgins' (1992) survey found 32 per cent of polytechnic students living within a 60 mile radius, compared to 20 per cent of university students.

National data on the home region of polytechnic students became available through the central admissions system in 1986, though the basis of the data changed slightly in subsequent years. They showed that the extent to which polytechnics served students from their region varied. In 1986, polytechnics in the North, the North West and the South East had the highest recruitment of students from their own regions (in excess of 40 per cent of admissions) (Table 3.23). To an extent the figures reflect the density of polytechnic provision in these regions, but it is clear that some polytechnics were largely regional institutions, whilst others, such as those in the East Midlands and the South West, had a more national catchment. Data for polytechnics and colleges in 1991 show a similar pattern, though on a slightly different basis (Table 3.24). Here the regional catchment of institutions in Wales is most evident.

The data also show that the polytechnics were, on the whole, recruiting students from a less national basis than the universities. In 1985 (comparable data are not available for 1986), the highest recruitment by universities of students from their own region in England was 33 per cent in the South East (Table 3.25). This figure was comparable with the polytechnics in that region, but lower than the highest figures for the polytechnics generally. However, the university data for 1991 show a tendency for an increasing regional catchment, with universities in most regions recruiting a higher

*Table 3.24* **Region of domicile of students admitted to degree courses in polytechnics and colleges, year of entry: 1991**

| *Region of admitting polytechnic/college* | *Northern* | *Yorks and Humberside* | *North West* | *East Midlands* | *West Midlands* | *East Anglia* | *Greater London* | *South East* | *South West* | *Wales* | *Scotland* | *Northern Ireland* | *N/K* | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | % | % | % | % | % | % | % | % | % | % | % | % | % | |
| Northern | 39.0 | 14.9 | 13.2 | 6.0 | 5.8 | 2.2 | 3.6 | 7.6 | 2.0 | 1.5 | 1.5 | 2.7 | 0.0 | 4630 |
| Yorks and Humberside | 6.2 | 31.3 | 19.2 | 9.6 | 8.5 | 2.6 | 4.3 | 10.7 | 3.5 | 2.0 | 0.6 | 1.4 | 0.0 | 8006 |
| North West | 5.9 | 8.1 | 45.2 | 5.3 | 8.5 | 1.6 | 5.1 | 9.6 | 3.5 | 3.7 | 0.7 | 2.7 | 0.0 | 8823 |
| East Midlands | 2.7 | 8.8 | 9.8 | 24.4 | 13.6 | 5.2 | 6.9 | 18.0 | 5.6 | 3.5 | 0.4 | 1.2 | 0.0 | 6837 |
| West Midlands | 2.6 | 6.6 | 11.8 | 7.7 | 34.6 | 2.7 | 5.7 | 15.4 | 6.9 | 4.3 | 0.6 | 1.1 | 0.0 | 7585 |
| East Anglia | 2.5 | 4.7 | 3.6 | 5.9 | 7.1 | 19.9 | 9.9 | 33.2 | 8.1 | 2.7 | 0.8 | 1.6 | 0.1 | 1465 |
| Greater London | 1.4 | 2.7 | 3.3 | 3.4 | 4.6 | 2.6 | 49.5 | 22.6 | 6.4 | 2.0 | 0.7 | 0.8 | 0.1 | 16415 |
| South East | 1.6 | 3.2 | 4.0 | 4.8 | 6.9 | 3.9 | 14.3 | 43.9 | 12.0 | 3.9 | 0.6 | 1.0 | 0.0 | 9863 |
| South West | 1.3 | 2.6 | 4.6 | 4.5 | 9.3 | 2.2 | 7.1 | 25.6 | 35.1 | 6.1 | 0.8 | 0.8 | 0.0 | 6758 |
| Wales | 1.4 | 2.3 | 5.8 | 2.5 | 6.4 | 0.9 | 3.6 | 10.4 | 9.6 | 55.4 | 0.4 | 1.2 | 0.0 | 2413 |

*Source:* PCAS Statistical Supplement 1990–91.

*Table 3.25* Region of domicile of students accepted at university: 1985

| *Region of accepting university* | *Northern and Yorks* % | *North West* % | *East Midlands* % | *West Midlands* % | *East Anglia* % | *London* % | *South East* % | *South West* % | *Wales* % | *Scotland* % | *Northern Ireland* % | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northern and Yorks | 22.8 | 18.2 | 8.8 | 8.8 | 3.5 | 9.2 | 18.5 | 5.2 | 2.1 | 1.8 | 1.1 | 11405 |
| North West | 16.3 | 27.0 | 6.3 | 10.1 | 1.9 | 10.5 | 15.7 | 5.3 | 3.9 | 0.9 | 2.1 | 7683 |
| East Midlands | 14.7 | 12.7 | 10.7 | 9.9 | 5.1 | 9.1 | 23.1 | 8.3 | 4.5 | 0.9 | 1.2 | 4360 |
| West Midlands | 11.2 | 12.2 | 7.5 | 15.1 | 2.9 | 11.2 | 24.2 | 9.4 | 4.1 | 0.8 | 1.5 | 5332 |
| East Anglia | 10.7 | 8.3 | 6.0 | 6.6 | 6.8 | 17.3 | 29.8 | 8.5 | 2.4 | 2.5 | 1.3 | 4234 |
| London | 7.5 | 7.0 | 4.1 | 6.1 | 3.6 | 25.0 | 31.3 | 9.7 | 3.9 | 1.0 | 0.8 | 8521 |
| South East | 7.2 | 7.2 | 5.1 | 7.6 | 3.9 | 17.8 | 33.3 | 11.5 | 4.0 | 1.4 | 1.1 | 11218 |
| South West | 5.7 | 6.6 | 3.9 | 8.1 | 3.0 | 14.5 | 36.0 | 15.4 | 5.0 | 1.0 | 0.9 | 4083 |
| Wales | 5.5 | 8.7 | 4.4 | 11.1 | 1.8 | 8.2 | 18.8 | 11.0 | 28.9 | 0.5 | 1.1 | 5275 |
| Scotland | 4.1 | 3.1 | 1.0 | 1.6 | 0.8 | 3.3 | 5.9 | 1.7 | 0.6 | 74.8 | 3.1 | 10724 |
| Northern Ireland | 1.1 | 1.7 | 0.4 | 0.7 | 0.2 | 1.9 | 2.0 | 0.6 | 0.3 | 1.5 | 89.6 | 3346 |

*Source*: UCCA Statistical supplement to the twenty-third report 1984–85.

*Table 3.26* Region of domicile of students accepted at university: 1991

| *Region of accepting university* | *Northern and Yorks* % | *North West* % | *East Midlands* % | *West Midlands* % | *East Anglia* % | *London* % | *South East* % | *South West* % | *Wales* % | *Scotland* % | *Northern Ireland* % | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Northern and Yorks | 25.6 | 18.5 | 9.1 | 8.2 | 3.7 | 7.4 | 17.6 | 5.7 | 1.9 | 1.4 | 0.9 | 16606 |
| North West | 15.9 | 30.7 | 5.9 | 9.9 | 2.4 | 8.6 | 15.0 | 5.5 | 3.9 | 0.8 | 1.4 | 12990 |
| East Midlands | 15.1 | 11.7 | 13.5 | 10.3 | 5.2 | 7.1 | 23.8 | 8.1 | 3.4 | 0.8 | 0.9 | 6407 |
| West Midlands | 9.9 | 11.7 | 7.9 | 20.1 | 2.8 | 9.3 | 23.5 | 9.0 | 4.3 | 0.6 | 0.8 | 7533 |
| East Anglia | 10.3 | 8.1 | 6.6 | 7.0 | 9.0 | 15.2 | 30.2 | 7.5 | 2.7 | 2.0 | 1.5 | 4363 |
| London | 4.5 | 5.0 | 3.6 | 5.1 | 3.7 | 35.7 | 29.6 | 8.7 | 2.7 | 0.9 | 0.6 | 10471 |
| South East | 5.6 | 5.0 | 4.4 | 6.3 | 4.3 | 20.5 | 36.1 | 11.9 | 3.7 | 1.0 | 1.2 | 16736 |
| South West | 3.8 | 4.9 | 3.7 | 8.2 | 3.3 | 14.1 | 33.8 | 21.4 | 5.1 | 1.1 | 0.6 | 5920 |
| Wales | 4.4 | 7.4 | 3.7 | 11.1 | 1.8 | 6.9 | 19.9 | 12.9 | 30.7 | 0.6 | 0.6 | 7103 |
| Scotland | 6.4 | 4.7 | 1.5 | 2.1 | 1.2 | 3.7 | 6.5 | 2.2 | 0.7 | 66.4 | 4.5 | 14332 |
| Northern Ireland | 0.7 | 0.6 | 0.4 | 0.6 | 0.2 | 1.1 | 1.3 | 0.4 | 0.1 | 0.5 | 94.1 | 4256 |

*Source:* UCCA Statistical Supplement to the twenty-ninth report 1990–91.

*Table 3.27* Polytechnics: full-time and sandwich students from outside the United Kingdom

| | *Overseas* | *Total* | *% of total* |
|---|---|---|---|
| 1970 | 3296 | 59627 | 5.5 |
| 1971 | 4840 | 74891 | 6.5 |
| 1972 | 5076 | 77131 | 6.6 |
| 1973 | 6104 | 78647 | 7.8 |
| 1974 | 7659 | 82891 | 9.2 |
| 1975 | 10747 | 97900 | 11.0 |
| 1976 | 14445 | 113536 | 12.7 |
| 1977 | 15404 | 118004 | 13.1 |
| 1978 | 14531 | 120087 | 12.1 |

*Source:* DES Statistics of Education, Volume 3, Further Education.
*Note:* After 1979 statistics for overseas students no longer shown by polytechnics.

percentage of students from that region than in 1985 (Table 3.26). The universities were becoming slightly more regional as the polytechnics became more national.

Polytechnics were also international institutions. Some of their precursor colleges had a strong background in the recruitment of overseas students. At West Ham College of Technology, one of the colleges forming North East London Polytechnic, 48 per cent of full-time and sandwich advanced students in 1964 were from overseas (Burgess *et al.*, 1995). Most were on full-time courses, reflecting conventional wisdom about the difficulty of finding industrial placements. In 1971, there were nearly 5,000 full-time and sandwich overseas students in the 30 polytechnics, representing about 6 per cent of all full-time and sandwich students (Table 3.27). These numbers increased to over 14,500 in 1978 (when separate data cease to be available) and they represented 12 per cent of all full-time and sandwich students. Thereafter, data for the polytechnics and colleges show that numbers at first declined (as a result of increases in fees) but then increased again to exceed the 1980 level in 1989 (Figure 3.24). However, the nearly 25,000 in 1991 represented only 6 per cent of the total (Figure 3.25). In the universities, numbers of overseas students grew even faster, perhaps reflecting their stronger 'market' position (Table 3.28). By 1991 there were nearly 60,000, almost double the 1980 figure and representing 16 per cent of full-time and sandwich students.

## Student performance

From the outset there were challenges to the notion of A levels as an appropriate measure of either likelihood to benefit or as predictors of academic performance, with evidence to question the reliability of A level grades for predicting degree performance. Rees (1981), surveying the modular

*Figure 3.24* Students from abroad in polytechnics, colleges and universities, 1980–81 to 1991–92

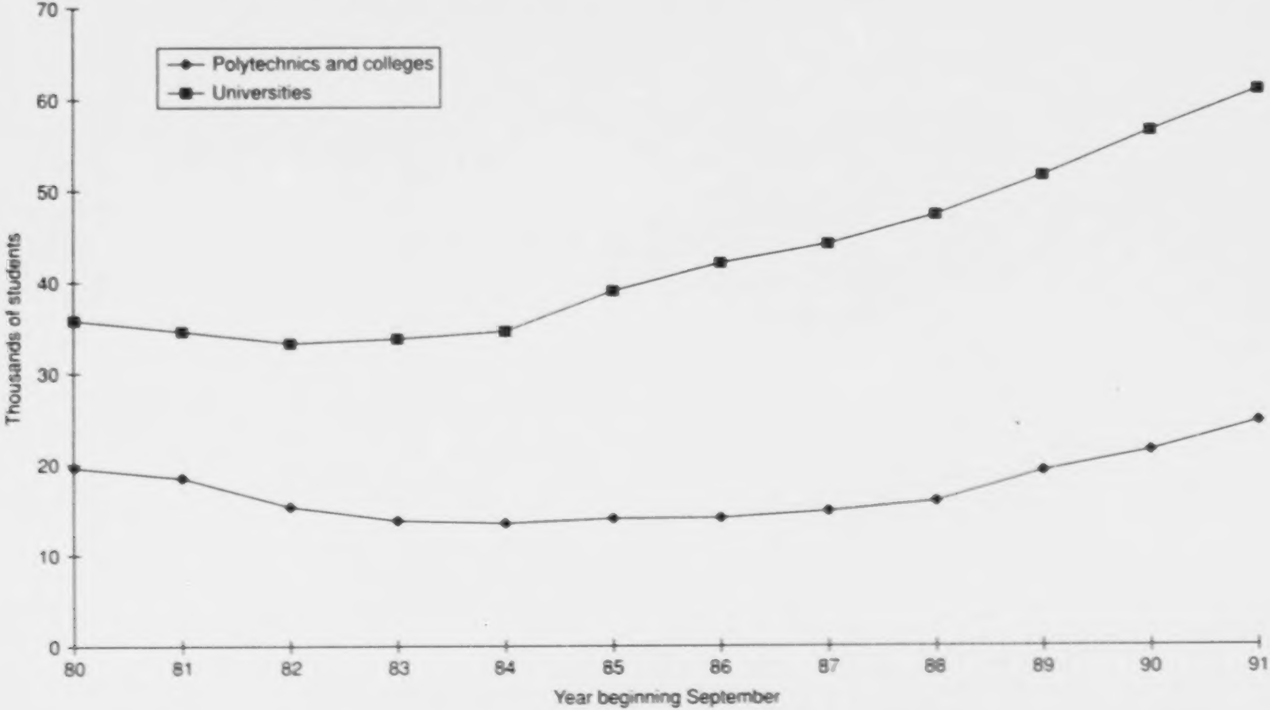


*Figure 3.25* Students from abroad in polytechnics, colleges and universities as a percentage of the total student body, 1980–81 to 1991–92

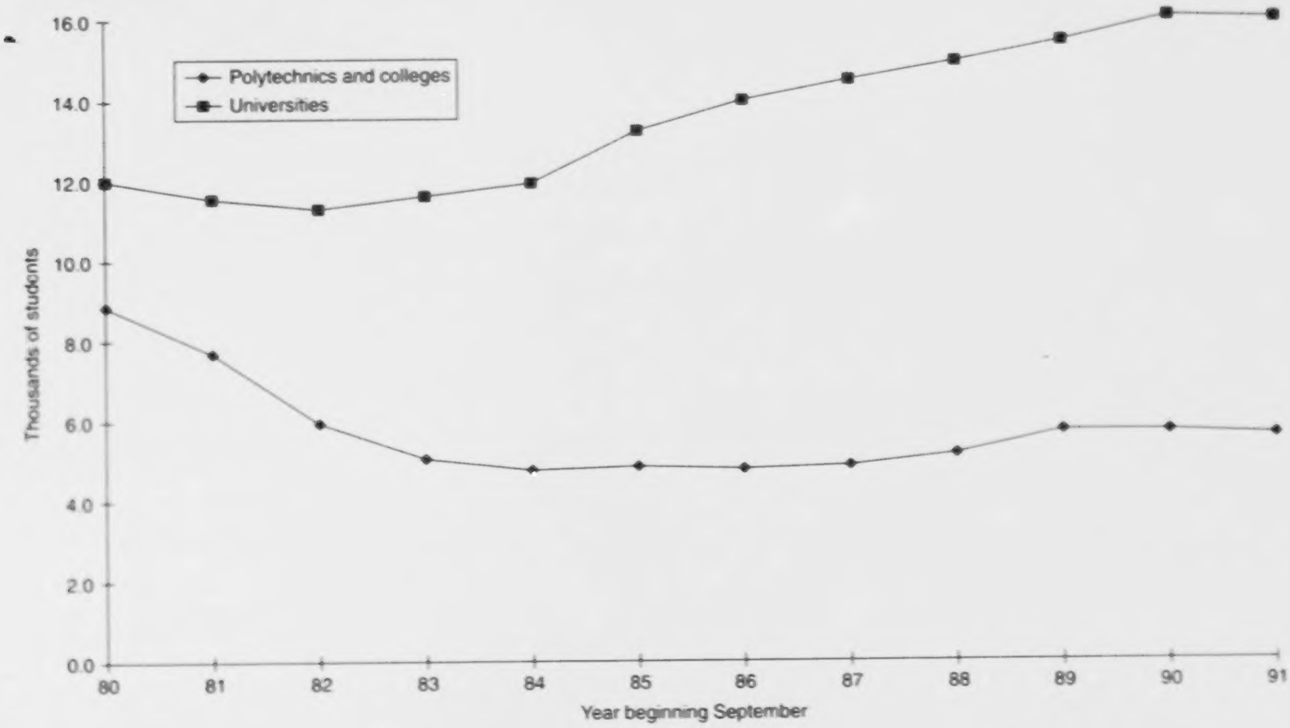


*Table 3.28* Full-time and sandwich students from abroad in higher education in polytechnics, colleges and universities

| | *Polytechnics and colleges* | | | *Universities* | | |
|---|---|---|---|---|---|---|
| | *Overseas (thousands)* | *Total (thousands)* | *% total students* | *Overseas (thousands)* | *Total (thousands)* | *% total students* |
| 1980 | 19.6 | 221.7 | 8.8 | 35.8 | 298.7 | 12.0 |
| 1981 | 18.5 | 241.3 | 7.7 | 34.6 | 300.2 | 11.5 |
| 1982 | 15.3 | 257.7 | 5.9 | 33.3 | 295.4 | 11.3 |
| 1983 | 13.8 | 273.4 | 5.0 | 33.8 | 291.7 | 11.6 |
| 1984 | 13.5 | 282.7 | 4.8 | 34.6 | 290.6 | 11.9 |
| 1985 | 14.0 | 288.0 | 4.9 | 39.0 | 295.5 | 13.2 |
| 1986 | 14.1 | 294.7 | 4.8 | 42.0 | 301.3 | 13.9 |
| 1987 | 14.8 | 303.3 | 4.9 | 44.1 | 305.4 | 14.4 |
| 1988 | 15.9 | 308.7 | 5.2 | 47.3 | 317.6 | 14.9 |
| 1989 | 19.2 | 335.9 | 5.7 | 51.5 | 334.5 | 15.4 |
| 1990 | 21.4 | 374.8 | 5.7 | 56.4 | 352.6 | 16.0 |
| 1991 | 24.6 | 438.5 | 5.6 | 60.9 | 382.4 | 15.9 |

*Source:* DES/DfE Statistical Bulletins 20/91, 21/93.

degree at Oxford Polytechnic, found that A level grades achieved by students who entered the course between 1973 and 1975 were of little value in predicting degree performance. A 15-year analysis of an electrical engineering degree at Huddersfield Polytechnic also concluded there was only a weak correlation between entry qualifications and degree performance, and that students with ONC/OND did particularly well (Briggs, 1985), confirming a finding by Pratt (1968) in the former colleges of advanced technology. Bourner and Hamed (1987), covering all CNAA degrees, found a positive association between A level points score and those achieving a 'good' degree, but also that those with weaker A level scores achieved disproportionately high qualifications when compared to the university sector. A study of five polytechnics concluded that, although GCE A level and ONC/D qualifications had an influence on attainment in initial exams, they had little value as predictors of performance by the time of final exams (Tinkler, 1978).

Others were interested in the success of mature students, both qualified and unqualified, compared to 18-year-old entrants. In general, mature students achieved substantially better results than younger students, and in all subjects degree results increased with age until 40 (Bourner and Hamed, 1987). Brennan (1986) following up 2,642 CNAA graduates from 1982, found that mature students did better than others in all broad areas of study except for engineering. Also, students over 21 on enrolment were more likely to get a 2.1 or better degree classification than under-21s (39 per cent and 30 per cent respectively). A study of economics graduates, however, concluded that good performance was associated with better A level records; women did better than men; and performance improved with age (Hadjimatheou and Rendall, 1986). These demonstrated that mature students performed at least as well, if not better, than the traditional student population of 18-year-olds. The small number of exceptional students in the system, who were under 21 without standard qualifications, also appear to have performed adequately, with results in the middle of the classifications (Bourner and Hamed, 1987). Research on a course at Hatfield Polytechnic specifically designed for mature students showed that those with A levels were more likely to get a good honours degree (56 per cent) compared to those without (45 per cent) (Michaels, 1986).

Part of the explanation of these findings may lie in Ramsden's (1983) study which found, contrary to expectations, that polytechnic students were more likely than university students to adopt a deep approach to studying, using meaningful learning strategies, seeking to understand what they were learning by relating it to previous knowledge and experience in an active and critical way. They were scored higher than their university counterparts on strategic orientation: they were extrinsically motivated and aware of the assessment 'game'. As polytechnic students were also more satisfied with the standard of teaching and the help they were given, he concluded that 'it seems clear that the polytechnics have been successful in developing a mode of undergraduate teaching which encourages understanding and at the same time is seen to be relevant' (Ramsden, 1983).

It was data like these that formed the background for NAB, when planning its strategy for higher education into the 1990s, to accept that entry requirements based on two A levels or their equivalents did not automatically guarantee the quality of the higher education that followed, and that they provided unnecessary barriers to entry, and to recommend that 'ability to benefit' should be the dominant criterion for entry to higher education (NAB, 1984).

## The destinations of students

The polytechnic policy did not explicitly make statements about the destination of students when they had completed their education, but its emphasis on vocational and professional education has several implications. For example, it can reasonably be taken to imply that polytechnic students would be more likely to enter employment in industry and commerce than students from the universities. It might, too, be expected that they would be less likely to be unemployed, if they were meeting the needs of the economy, though it could also be that they would be more vulnerable to fluctuations in the economic cycle. How far were these expectations borne out?

Data on the first destinations of students show that overall more polytechnic than university students went into permanent employment and fewer into further education or training. Between 1980–81 and 1989–90 when there

*Figure 3.26* First destination of polytechnic and university students 1973–74 to 1989–90

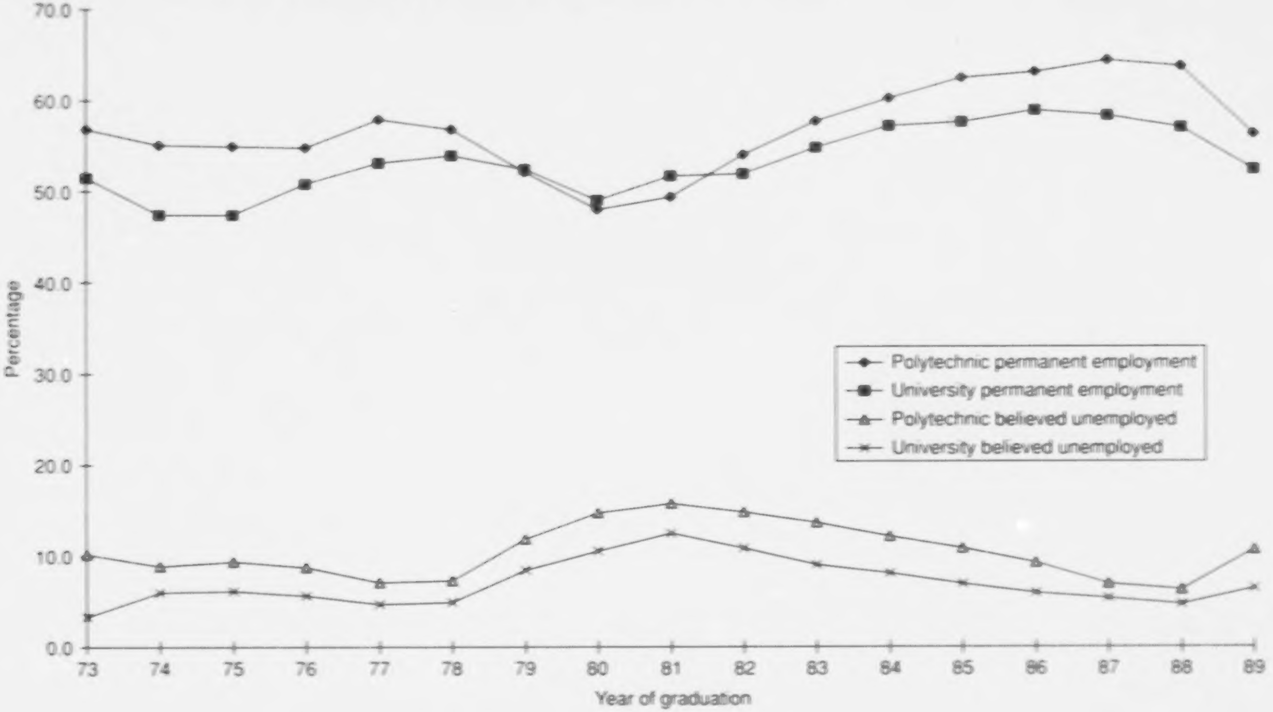


*Table 3.29* First destination of polytechnic first-degree graduates, 1973–74 to 1989–90

| | *Employment* | | *Further Education or Training* | *Believed unemployed* | *Other* |
|---|---|---|---|---|---|
| | *Permanent* | *Temporary* | | | |
| 1973–74 | 56.8 | 1.0 | 25.2 | 10.2 | 4.2 |
| 1974–75 | 55.1 | 6.9 | 25.3 | 8.9 | 3.9 |
| 1975–76 | 54.9 | 6.9 | 23.9 | 9.4 | 4.9 |
| 1976–77 | 54.8 | 9.5 | 21.4 | 8.7 | 5.5 |
| 1977–78 | 57.9 | 9.6 | 19.6 | 7.1 | 6.0 |
| 1978–79 | 56.8 | 9.4 | 19.9 | 7.3 | 6.7 |
| 1979–80 | 52.1 | 6.6 | 20.1 | 11.8 | 9.5 |
| 1980–81 | 48.0 | 6.4 | 20.4 | 14.7 | 10.7 |
| 1981–82 | 49.4 | 6.4 | 18.0 | 15.7 | 10.5 |
| 1982–83 | 54.0 | 5.7 | 16.7 | 14.8 | 8.7 |
| 1983–84 | 57.7 | 5.9 | 16.3 | 13.6 | 6.7 |
| 1984–85 | 60.2 | 5.3 | 16.5 | 12.1 | 6.0 |
| 1985–86 | 62.4 | 5.2 | 15.7 | 10.8 | 5.8 |
| 1986–87 | 63.1 | 6.2 | 15.3 | 9.2 | 6.2 |
| 1987–88 | 64.4 | 6.3 | 15.5 | 6.9 | 7.0 |
| 1988–89 | 63.7 | 6.9 | 15.4 | 6.3 | 7.6 |
| 1989–90 | 56.3 | 8.3 | 15.7 | 10.7 | 8.9 |

*Source*: Polytechnic Careers Advisers/AGCAS Statistics Working Party, First Destinations of Polytechnic Students Qualifying in 1973 *et seq.*
*Note*: For 1973–74 home temporary unemployment numbers were included in the unemployed total.

are broadly comparable data, the percentages of polytechnic students entering employment are higher in most years than those of university students (Figure 3.26). In 1973-74, for example, 57 per cent of polytechnic students were in permanent employment (Table 3.29) compared with 51 per cent of university students (Table 3.30). By 1989–90 the figures were 56 and 44 per cent. Figure 3.26 shows that employment rates followed broad economic trends, with the percentages finding jobs declining in the recession of the early 1980s and polytechnic students worse affected. Those entering further education or training from polytechnics rarely exceeded 20 per cent, whilst from universities, the figure was generally around 25 per cent.

Polytechnic students also appeared more vulnerable to the vagaries of the employment market, in that a higher proportion were unemployed (Figure 3.26); for example 10.7 per cent in 1989–90 (Table 3.29) compared with 6.4 per cent of university students (Table 3.30).

The data on type of employment are more equivocal. They show broadly comparable percentages entering industry and commerce as a whole, but a substantially higher proportion of polytechnic students in engineering and manufacturing (Figure 3.27). Between 1973–74 and 1989–90, the percentage of polytechnic graduates entering UK employment ranged between 56 and 65 per cent (Table 3.31), whilst for universities the figures were 49 to

*Table 3.30* First destination of university students, 1973–74 to 1992–93

| | *Employment* | | *Further Education or Training, Research* | *Believed unemployed* | *Other* |
|---|---|---|---|---|---|
| | *Permanent* | *Temporary* | | | |
| 1973–74 | 51.5 | 5.9 | 35.3 | 3.3 | 4.0 |
| 1974–75 | 47.4 | 6.6 | 35.7 | 6.0 | 4.4 |
| 1975–76 | 47.4 | 6.6 | 34.9 | 6.1 | 4.7 |
| 1976–77 | 50.8 | 6.9 | 31.2 | 5.6 | 5.5 |
| 1977–78 | 53.1 | 6.4 | 29.6 | 4.7 | 5.8 |
| 1978–79 | 53.9 | 6.9 | 27.7 | 4.9 | 6.6 |
| 1979–80 | 52.4 | 2.8 | 28.4 | 8.4 | 8.0 |
| 1980–81 | 49.0 | 2.9 | 28.8 | 10.5 | 8.8 |
| 1981–82 | 51.7 | 2.6 | 27.6 | 12.5 | 8.2 |
| 1982–83 | 51.9 | 3.1 | 27.0 | 10.8 | 7.1 |
| 1983–84 | 54.8 | 3.1 | 25.6 | 9.0 | 7.5 |
| 1984–85 | 57.2 | 3.1 | 24.7 | 8.1 | 6.9 |
| 1985–86 | 57.6 | 3.4 | 24.6 | 6.9 | 7.5 |
| 1986–87 | 58.9 | 3.3 | 24.1 | 5.9 | 7.8 |
| 1987–88 | 58.3 | 3.5 | 23.3 | 5.3 | 9.7 |
| 1988–89 | 57.0 | 3.5 | 23.4 | 4.7 | 11.3 |
| 1989–90 | 52.4 | 3.9 | 24.2 | 6.4 | 13.0 |
| 1990–91 | 45.6 | 4.6 | 28.0 | 9.4 | 12.4 |
| 1991–92 | 42.7 | 5.1 | 29.6 | 10.6 | 12.0 |
| 1992–93 | 44.1 | 5.0 | 29.6 | 9.5 | 11.7 |

*Source*: UGC/USR University Statistics, First destination of university graduates.
*Note*: Percentage of total known destinations as at 31 December.

63 per cent (Table 3.32). Whilst those entering engineering and manufacturing from polytechnics showed a gradual decline from 48 to 31 per cent over the period, this was always a higher figure than those from universities, who dropped from 30 to 17 per cent.

These data confirm Pratt's (1988) findings from an analysis of the first destination statistics of students in polytechnics compared with students from universities and other colleges. He also noted that graduates from colleges of higher education had an employment rate similar to those from polytechnics. In 1985–86, 61 per cent achieved permanent UK employment, whilst 10 per cent were unemployed. Only about 4 per cent of college of higher education graduates went on to research or academic study.

Pratt (1988) also showed that employment prospects for graduates were affected by the subject studied. Thus, 98 per cent of pharmacy graduates from polytechnics in 1985 found permanent UK employment in 1985 (CRAC/CBI, 1987). Other subjects with figures over 70 per cent in this category were: accountancy, education, mathematics and computing, electrical and electronic engineering, and business and management studies. Unemployment was highest mainly in arts subjects in polytechnics (for example, general and combined arts, 23 per cent; history, 22 per cent),

*Figure 3.27* Percentage of graduates entering UK employment in industry and commerce, 1973–74 to 1989–90

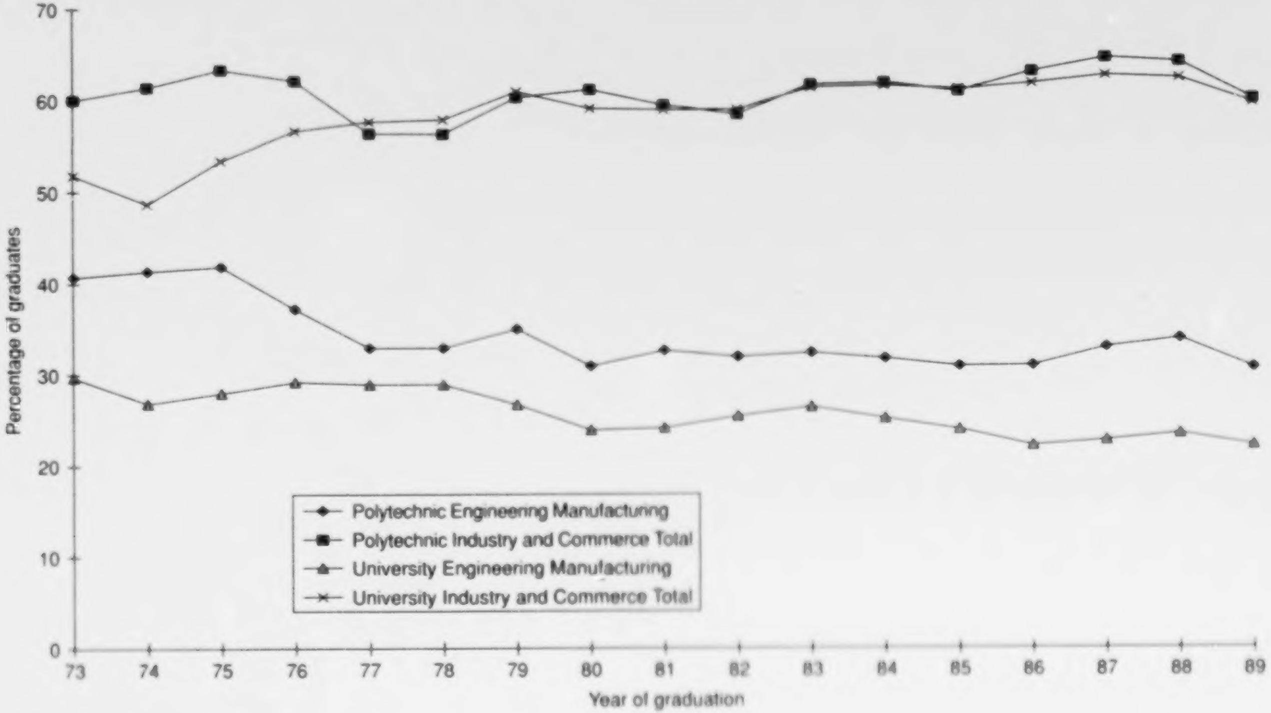


*Table 3.31* First destinations of polytechnic students entering UK employment

| | Public service | Education | Industry and Commerce | | | | | Miscellaneous | Unknown |
|---|---|---|---|---|---|---|---|---|---|
| | | | Agriculture and Mining | Engineering Manufact., etc. | Accountancy and Banking, etc. | Other | Total | | |
| 1972–73 | 20.5 | 5.7 | 4.5 | 48.4 | 5.6 | 9.5 | 58.5 | 5.9 | |
| 1973–74 | 28.7 | 6.0 | 4.7 | 40.7 | 6.8 | 7.8 | 60.0 | 5.1 | |
| 1974–75 | 27.6 | 4.7 | 4.6 | 41.3 | 5.5 | 10.0 | 61.4 | 6.4 | |
| 1975–76 | 20.9 | 9.8 | 3.9 | 41.8 | 5.9 | 11.6 | 63.3 | 5.9 | |
| 1976–77 | 18.3 | 11.8 | 5.1 | 37.2 | 5.4 | 14.3 | 62.1 | 7.8 | |
| 1977–78 | 19.3 | 17.4 | 3.4 | 32.9 | 5.2 | 14.7 | 56.3 | 7.0 | |
| 1978–79 | 18.3 | 18.7 | 3.0 | 32.9 | 6.1 | 14.7 | 56.2 | 6.9 | |
| 1979–80 | 13.7 | 16.7 | 3.5 | 35.0 | 8.0 | 13.7 | 60.2 | 5.1 | |
| 1980–81 | 18.0 | 13.0 | 3.5 | 30.9 | 8.5 | 18.2 | 61.1 | 7.8 | 0.8 |
| 1981–82 | 20.4 | 10.2 | 3.5 | 32.6 | 7.9 | 15.5 | 59.4 | 8.3 | 1.6 |
| 1982–83 | 19.3 | 12.2 | 3.4 | 31.9 | 6.8 | 16.4 | 58.4 | 8.0 | 2.1 |
| 1983–84 | 17.9 | 9.1 | 3.9 | 32.3 | 8.1 | 17.3 | 61.6 | 9.2 | 2.2 |
| 1984–85 | 18.3 | 9.7 | 4.2 | 31.7 | 8.6 | 17.4 | 61.8 | 8.3 | 1.9 |
| 1985–86 | 18.7 | 10.4 | 3.4 | 30.8 | 9.4 | 17.4 | 60.9 | 8.5 | 1.6 |
| 1986–87 | 16.8 | 10.6 | 3.9 | 30.9 | 10.6 | 17.6 | 63.0 | 8.0 | 1.6 |
| 1987–88 | 14.7 | 10.9 | 4.6 | 32.9 | 8.9 | 18.4 | 64.5 | 8.0 | 1.9 |
| 1988–89 | 15.3 | 11.3 | 4.8 | 33.8 | 8.9 | 16.5 | 64.1 | 7.6 | 1.7 |
| 1989–90 | 16.0 | 13.4 | 4.2 | 30.6 | 8.8 | 16.3 | 60.0 | 8.8 | 1.9 |

*Source*: Polytechnic Careers Advisers/AGCAS Statistics Working Party, First Destinations of Polytechnic Students Qualifying in 1972 *et seq.*

*Table 3.32* First destination of university students entering UK employment, 1973–74 to 1992–93

| | *Public service* | *Education* | *Industry and Commerce* | | | | | *Miscellaneous* |
|---|---|---|---|---|---|---|---|---|
| | | | *Agriculture, Mining, Oil, etc.* | *Engineering/Management Building/Transport* | *Accounting, Banking, etc.* | *Other* | *Total* | |
| 1973–74 | 31.8 | 6.4 | 6.0 | 29.7 | 10.4 | 5.7 | 51.8 | 10.0 |
| 1974–75 | 34.5 | 6.8 | 5.1 | 26.8 | 11.2 | 5.6 | 48.7 | 10.0 |
| 1975–76 | 30.0 | 5.8 | 5.7 | 28.0 | 12.1 | 7.4 | 53.4 | 10.7 |
| 1976–77 | 27.5 | 5.0 | 6.3 | 29.2 | 12.8 | 8.3 | 56.6 | 11.0 |
| 1977–78 | 26.0 | 5.2 | 6.6 | 28.9 | 12.4 | 8.6 | 57.6 | 10.9 |
| 1978–79 | 26.1 | 5.5 | 6.0 | 28.9 | 13.1 | 9.7 | 57.8 | 10.7 |
| 1979–80 | 26.1 | 5.9 | 6.7 | 26.7 | 16.0 | 11.6 | 60.9 | 7.0 |
| 1980–81 | 27.3 | 6.3 | 7.4 | 23.9 | 15.6 | 12.2 | 59.0 | 7.4 |
| 1981–82 | 27.1 | 5.9 | 6.0 | 24.1 | 15.8 | 12.8 | 58.9 | 8.2 |
| 1982–83 | 26.7 | 6.0 | 4.8 | 25.4 | 15.7 | 13.1 | 58.9 | 8.3 |
| 1983–84 | 25.0 | 5.7 | 6.2 | 26.4 | 15.7 | 13.0 | 61.3 | 8.0 |
| 1984–85 | 24.7 | 5.8 | 6.5 | 25.1 | 17.2 | 12.5 | 61.5 | 8.1 |
| 1985–86 | 25.2 | 5.6 | 5.3 | 23.9 | 18.9 | 13.1 | 61.1 | 8.1 |
| 1986–87 | 23.4 | 5.7 | 5.7 | 22.1 | 19.6 | 14.3 | 61.7 | 9.2 |
| 1987–88 | 22.8 | 5.4 | 6.4 | 22.7 | 18.5 | 14.9 | 62.6 | 9.1 |
| 1988–89 | 22.7 | 5.3 | 6.1 | 23.4 | 17.7 | 15.2 | 62.3 | 9.7 |
| 1989–90 | 24.4 | 6.4 | 5.9 | 22.1 | 17.2 | 14.4 | 59.6 | 9.5 |
| 1990–91 | 26.5 | 7.3 | 5.4 | 19.5 | 15.8 | 14.7 | 55.4 | 10.8 |
| 1991–92 | 26.5 | 7.2 | 4.6 | 18.2 | 14.3 | 17.2 | 54.2 | 12.0 |
| 1992–93 | 24.7 | 7.5 | 4.0 | 17.0 | 14.3 | 19.8 | 55.2 | 12.5 |

*Source*: UGC/USR University Statistics, First destination of university graduates.
*Note*: Based on percentage of total 'entering home employment'.

sociology and social studies (20 per cent) and also in certain specific fields such as chemical engineering (18 per cent). Only 37 per cent of students from polytechnics in this last subject entered permanent employment in 1985 compared to 68 per cent of university graduates.

It was also better to be a man if you were looking for work on leaving higher education, but better as a woman to be graduating from a polytechnic. In 1985, 61 per cent of polytechnic (and 58 per cent of university) graduate males found permanent UK employment compared with 56 and 51 per cent (respectively) of women (CRAC/CBI, 1987). Brennan and McGeevor (1988) found that women CNAA graduates were more likely than men to have experienced unemployment three years after graduation, and less likely to be in professional posts (27 per cent compared to 42 per cent).

The highest proportion of graduates entering industry from the polytechnics were from engineering and technology, whilst the highest proportions in commerce came from social, administrative and business studies and languages, literature and area studies.

Sandwich course students, predominantly from the non-university sector, tended to find employment quicker, stay with the firm longer and earn significantly higher salaries than comparable full-time graduates. A study of sandwich course graduates showed that they were more likely to enter manufacturing industry and only half as likely to enter the financial sector: 'sandwich courses are more likely to provide graduates for the much-called for revitalisation of United Kingdom industry, to encourage more of them to take up careers in trade and industry, manufacture and marketing' (Culshaw, 1987).

Pratt's (1988) figures above are for graduates. The first destination of sub-degree level students depended on the kind of qualification. Thus 50 per cent of those graduating with BTEC Higher Diploma or HND from polytechnics in 1985–86 entered permanent UK employment, compared with 6 per cent of DipHE graduates (CSU, 1987); 34 per cent of the former group entered manufacturing industry and another 33 per cent entered commerce. Most DipHE graduates (86 per cent) went on to further study, mostly first-degree courses. The DipHE was clearly viewed as a stepping stone to further qualification; it was not widely recognized by either students or employers as a terminal qualification.

It must be borne in mind that surveys of first destination of graduates are taken within six months of graduation. Brennan and McGeevor (1988) uncovered a significant drop in unemployment amongst non-university graduates (to 4 per cent) after three years following graduation. In all fields of study, there were many job changes in the first three years of a graduate's employment, with marked variations in the time taken to find permanent employment. In most subject areas, postgraduate qualifications played an important role in making the transition to employment. For many graduates the jobs obtained were unsuitable. Gourses characterized as 'occupational specialist' (such as law, accountancy, many kinds of engineering, nursing, etc.) provided better opportunities for a smooth transition to work than others, but the match between courses and the supply of graduates and employers' needs was often initially poor.

In terms of the employment of graduates, the perception of employers of the value of a degree is crucial. The graduate is often viewed by employers as a cost-effective way of finding employees: degrees are seen as value-added to A level qualifications (Roizen and Jepson, 1985). Hunter (1981) argued that firms minimize their risks in recruiting by using academic credentials as a screening device and so avoid searching through large graduate populations. In this, the institution attended becomes a significant proxy measure. Pratt (1988) reported studies showing that many employers had very different criteria for university and public sector graduates. They were more demanding of the former, recruiting for senior management posts, whereas adaptability was ranked as the highest criterion for polytechnic graduates. The emerging trend was for employers to favour university graduates if choices had to be made. Polytechnic graduates were generally felt to have lower academic ability but to be more vocationally oriented (Brennan and McGeevor, 1988), though there was a marked lack of knowledge about the binary system on the part of the employers (Roizen and Jepson, 1985). Boys and Kirkland (1988) found that more polytechnic than university graduates felt that their course had prepared them for the occupation they had in mind. Silver (1981) suggested that polytechnics were viewed 'as producing second rate graduates both intellectually and socially'. A level grades were often used as a guide by employers during their recruitment before students gained their degrees, and since generally students at universities had higher grades, employers passed over polytechnic applicants. Given this, however, Boys and Kirkland (1988) suggested that 'it could be argued that polytechnic graduates do better than expected in the labour market'. But, as Roizen and Jepson (1985) pointed out, 'the type of institution attended . . . emerges as perhaps the single most important determinant of the value of the degree in the market place'. Polytechnics lacked status and their graduates had grounds for feeling discriminated against. The only areas which appeared to escape this discrimination were sandwich courses, with established links with industry and commerce and which act as a screening device for employers during the work experience period; and traditionally specialist vocational subjects where there is a high match between subject studied and type of employer.

## Conclusions

When the policy for polytechnics was announced in the 1960s, there was concern that its intentions would be frustrated by the historic tendency to academic drift. This chapter has shown that, although some of these concerns were justified, particularly in the early years, the polytechnics succeeded in fulfilling many of the intentions in terms of numbers and kinds of students. Some of the achievement was remarkable in the light of the historic precedent, whilst in some other respects it was less than might have been hoped.

The polytechnics' contribution to the central aim of expansion of higher education, for example, was substantial, but for much of the period comparable with that of the universities and the other colleges. Some of the polytechnics' achievement in expansion came from amalgamations with colleges of education in the 1970s, from the universities' decision to cope with financial constraint by stabilizing numbers in the early 1980s, from a response to financial incentives in the late 1980s, and from new designations after 1988.

Within these numbers there were significant policy successes, though again some disappointments. Overall, the polytechnics maintained a comprehensive range of courses. But early warnings about the diminution of part-time study were justified by a considerable decline in numbers, though the polytechnics did redeem the position in later years. They were undoubtedly successful in expanding sandwich course provision, against the odds, and in expanding in business and social sciences, though there was a decline in the proportion of students on courses in engineering to less than half that at their inception. They achieved a major shift towards degree courses and a substantial expansion at postgraduate level, though at the cost of stagnation of sub-degree work.

The polytechnics also maintained and developed the open tradition and expanded access to new kinds of students. They were particularly successful in increasing the numbers of women, students from ethnic minorities and mature students, though in this last respect less spectacularly than is often thought. They can claim to have maintained greater access to students from working-class backgrounds, though less than might perhaps have been hoped. As they developed, they increasingly had a national catchment, though less than the universities. They also came to compete with the universities in terms of A level entry qualifications, and although this might have been damaging to the aim of open access, more than half of degree entrants had non-traditional qualifications. A higher proportion of their graduates than those from universities entered employment, particularly in engineering and manufacturing.

In 1974, Pratt and Burgess claimed that virtually all the changes in the size and composition of the student body in the polytechnics' precursor institutions at the end of the 1960s represented a reversal of the intentions of the Woolwich and Lancaster speeches and the 1966 White Paper. They concluded that the policy for polytechnics was, even in these early days, failing and could be seen to be so. This was perhaps harsh, but not without validity given the considerable changes at that stage. It may be too much to claim that it was these warnings which prompted action by the polytechnics to redeem the position, but academic drift was a major issue in policy debate in Britain and other countries throughout the next two decades (OECD, 1991). By the time the polytechnics became universities, it was no longer possible to describe the policy as a failure. The polytechnics had become the larger sector in higher education; they were offering opportunities for degree-level education to a wide range of new kinds of students; they had maintained many of the traditions of the sector which had appeared threatened, and recovered some of the earlier lost ground. The polytechnics had, as OECD (1991) described in an international study of non-university sectors, 'acquired recognition and legitimacy' within the national system of higher education, as indeed had non-university sectors in many other countries. They had become a 'significant alternative' to the universities and contributed, to varying extents, to the social goal (in OECD terms) of democratization of higher education.

OECD (1991) also noted some of the limitations of these successes of the polytechnics which have been recorded in this chapter, particularly the ambiguity of their contribution to expansion of numbers and the modest achievement of aspects of the goal of democratizing higher education. It also raised the question of whether non-university institutions like polytechnics protected the universities from change by providing an alternative route to higher education. The argument has less validity in Britain than in most other countries, where the non-university sector was designedly different in terms of level and length of courses. Britain had a true binary system with formal equality of status of degrees up to and including doctoral level. But, as in other OECD countries, the hope of equalizing life-chances through educational channels requires more than educational change. Whilst many more and different people were able to get higher education through the polytechnic policy, their employment prospects were still dominated by perceptions of the value of a university degree.

# 4

# New Maps of Learning

When the polytechnics were established, they were formed from colleges bringing with them a variety of academic traditions. Predominant was that of the technical colleges, with highly vocational courses, known for heavy teaching input and didactic methods. But there were others; the art colleges had a different, less directive and sometimes apparently anarchic tradition; there were colleges of commerce and of specialized vocations. Nor were all the technical colleges in the same mould. Many were already developing in new disciplines, especially the social sciences, with, often, less rigid pedagogy. Later came the addition of the more cloistered traditions of the colleges of education.

## The nature of a degree

The polytechnic policy implied major changes, though the official documents and even ministerial speeches offered little educational or academic content. But the advocates of the policy were clear. Robinson (1968), for example, saw the polytechnic policy as the advent of mass education. This required not only changes of educational institutions (such as the creation of the polytechnics), but 'a review of the content of education' and, he went on, 'of the whole academic machinery which sustains it'. He saw a need for fundamental change. He chided the Robbins Committee for failing to ask the 'vital question': 'what is a degree and what is it for?' He noted, too, the dominance by the universities of the education system as a whole, not just higher education. He pointed out that not only was higher education for an elite, but that it was still a minority of children who took GCE examinations. The progression through the system to a university was 'abnormal: the vast majority of our young people do not follow it'. The educational task of the polytechnics could thus be seen as twofold: creating a form of higher education appropriate to a mass system, and ensuring the access of students from the 'vast majority' into it. We have examined aspects of the second question in Chapter 3. We now turn to the success of the polytechnics in addressing the first.

Robinson discussed at some length the issues that this task presented and it is worth recalling, not least because few others (either then or since) have presented a coherent argument for a new approach to higher education. He began with the conventional antithesis between liberal and vocational education. Whilst he accepted that aspects of the distinction were false (with many university courses having vocational purpose and liberal courses at times narrow and restrictive), he argued that it still underpinned much educational and official thinking: 'There is a huge development of university courses which are designed with little or no concern for the student's future vocation . . .' (Robinson, 1968). On the other hand, vocational courses often taught much that was vocationally useless and were boring to boot. Robinson, in fact, saw 'no insuperable problem' in reconciling the ideals of liberal and vocational education; a properly conceived vocational education would encompass many of the liberal ideals of individual development and a concern with thought, judgement and values.

The picture was compounded by the emergence of 'academic' education. This Robinson identified with the intensive study of one subject and saw its development as inimical to both vocational and liberal education: 'From being mere sub-divisions of convenience for the purposes of study, academic subjects have grown into intemperate monsters each with its army of fanatical partisans' with the result that 'any attempt to devise a course of vocational or liberal education is perverted into a mere assortment of academic bits each controlled and dispensed by the appropriate subject priests' (Robinson, 1968). All this meant that the students' experience lacked, in today's terms, coherence and progression, or in Robinson's view, unity of meaning. He was doubtful of the public sector institutions' ability to develop a distinctive form of education that met his requirements. He saw the task of the polytechnics as pushing the experiment of high level vocational education 'further than the CATs had been prepared to go' (with the DipTech in engineering and applied science). Advance was also needed in other fields, including business studies, social sciences and art. The provision of courses for mature students was particularly important, since they were more likely to have positive vocational motivation. But he did not see the binary policy reflected in polytechnics being restricted to vocational courses and universities to academic: 'To meet the needs of students the polytechnics must offer comprehensive facilities in both academic and vocational education'. The key lay in polytechnics 'making their students their primary consideration unambiguously and without fear or favour – students should come before subjects, before research, before the demands of employers and before demands of the state'. It was a stiff order but the stakes were high: 'If they do this they will change the pattern of higher education in this country. If they do not they will fail to do anything of significance'.

At the creation of the polytechnics, Robinson's questions – about the nature of a degree and what it was for – were unlikely to have been their prime concern. Degree courses were a minority activity with fewer than one in six advanced students on them (see Chapter 3). Until the 1960s, the only degree courses were external university provision; largely single subject and externally assessed by traditional closed-book examinations.

Nor were the auguries entirely propitious. While the advent of the CNAA promised the public sector institutions the opportunity to develop new and distinctive degrees, the attitudes within CNAA initially limited what was seen as possible. For example, Professor Crick, Chair of the CNAA Business Studies Board, saw the immediate problem confronting the new polytechnics as 'how one assesses university standard' (Crick, 1969). Initial debates (which continued into the 1970s) included the relatively abstruse relationship between honours and ordinary degrees; equally contentious at this early stage was the discussion over a separate designation for sandwich degrees, though the decision was finally taken that they should be treated in the same way as other first degrees.

At a conference in 1970, the debate by participants (mostly from polytechnics) of their experience of CNAA validation to date

> concerned the lack of encouragement from the CNAA subject boards for colleges to experiment with their courses . . . the surest way of getting a course approved is to present it as a traditional academic course . . . The situation is at stalemate given the predominant membership on the subject boards of traditional university teachers.
>
> (Silver, 1990)

Thus it was not surprising that the early expansion of first degrees in the polytechnics was mainly of full-time, single-subject courses. Many were replacements for university external degrees and for the DipTech.

But the circumstances were not all restrictive. There had been substantial innovation in the CATs and the leading regional colleges, under the NCTA (see Chapter 6). New educational thinking had been necessary for the DipTech; colleges such as Hatfield and Stafford had introduced computing into undergraduate courses and others had developed courses in mathematics for technology and business. The processes of the CNAA and the activities of the new polytechnics also began to make changes. The polytechnics began to develop degree courses in subjects that they had not previously offered, and courses with distinctive characteristics. Among these was the emergence of courses which brought to graduate status vocational areas of the colleges' work, expanding intellectual activity into new fields and into para-professional fields. Within a decade of the establishment of the polytechnics, Scott was able to write that these developments provided 'not only an absolute academic gain, but an important expansion of our idea of the scope of higher education' (Scott, 1981). As a former director of one polytechnic put it, the polytechnics invented the non-engineering vocational degree. It became possible to talk of 'new maps of learning' in the polytechnics.

## New fields of study

Law was typical of a subject that the polytechnics had not hitherto offered at degree level. The first undergraduate law degree in a polytechnic was approved by CNAA in 1966 at Manchester. Courses expanded rapidly in the 1970s. While most polytechnic courses were similar to the university sector, some polytechnics developed more innovative courses. Three introduced business law courses, one developed a four-year sandwich degree in law, including a year's placement in a legal practice, while another developed a sandwich course in law and public administration. The development of part-time law courses was unique to the polytechnics and public sector colleges, as was the inclusion of law modules on combined studies degrees. The law curriculum was expanded to include optional subjects, such as housing law, welfare law, poverty law, computer law and law of medicine; teaching and learning methods were extended by the inclusion of project work. A number of polytechnic law courses had introduced 'clinical legal education' which could involve students undertaking live case work with clients (HMI, 1990a).

In science, HMI (1990b) found that the polytechnics had most of the high quality provision within public sector science courses. Sandwich courses in science were distinctive to polytechnics; these were mainly in single subjects, though combined sciences, in 1989, formed the largest distinctive group of science degrees. There was also a growth in modular degrees. At the same time there had been a decline in sub-degree enrolments, particularly part-time, and part-time professional courses in science. Students on polytechnic science courses often had modest A level grades.

In mathematics and computing, about half of all higher education students in 1989 were in the polytechnics and colleges sector. By the late 1980s, the computing services industry was the fastest growing sector of the British economy (HMI, 1990c), and this was recognized by the polytechnics, leading to the development of a range of courses at all levels. Polytechnic mathematics and computing courses were distinctive in mode and level of study: 90 per cent of first-degree students in universities were full-time, while in the polytechnics and colleges, 38 per cent were sandwich, and 34 per cent were part-time. The success of these courses can be measured by the fact that in 1988, 89 per cent of those graduating with first degrees in computer science from polytechnics had obtained permanent employment within six months, compared with a national average of 61 per cent for polytechnic students (HMI, 1990c). However, the universities enrolled three times as many postgraduate students as the polytechnics and colleges.

Modern languages also flourished in the polytechnics, marking a departure from their technical traditions. The courses were rarely single honours degrees. The majority of specialist degree courses applied the study of languages to the social, political or economic aspects of the countries concerned. Combined studies courses taught languages alongside another discipline, such as business studies, humanities and social sciences. By contrast with most universities, polytechnic courses emphasized fluency in the language, rather than foreign language literature. BTEC Higher Diploma courses also encouraged the inclusion of languages. The late 1980s saw the emergence of international degree courses, with students able to spend a year or two of their course in another country (HMI, 1990d). Membership of the European Community and the prospect of the single European market led to the development of courses with European connections; in 1985–86 the CNAA approved a Middlesex Polytechnic BA (Hons) route where students taking French spent two of their four years at Lille and qualified for BA and Licence (Lille) (CNAA, 1987a). Brighton Polytechnic cooperated with Politecnico di Torino to develop a course intended to produce graduates fluent in two languages and able to understand and practise the management functions required in high technology areas of manufacturing, with students spending two years in England and two in Italy (Jones and Firrao, 1990).

Among early areas to achieve degree status for the first time were specialized courses in nautical studies and librarianship, the latter requiring an interlock with the Library Association (Silver, 1990). North East London Polytechnic developed a BA Sociology with professional studies which combined academic studies with professional qualification from personnel management, social work and vocational guidance (McDougall, 1973). This fusion between the academic demands of degree status and the requirements of the professional bodies became a feature of many of the polytechnic degrees, often confronting course teams with numerous hurdles to surmount in the process (Brook and Parry, 1985).

CNAA degree (and other) courses facilitated the expansion of several whole new areas of work at degree level, fulfilling to some extent Robinson's (1968) ambitions. At the establishment of the CNAA, business studies was identified as a priority area, following the Crick report, *A Higher Award in Business Studies* (Crick, 1964). In 1965 the Business Studies subject board held its first meeting under the chairmanship of Professor Crick and in 1965–66 the first BA Business Studies courses started (Silver, 1990) and these expanded rapidly in all the polytechnics. For many years there were no such courses in the universities (indeed Lord Robbins had argued against them when Eric Robinson gave evidence to the Robbins Committee). By 1991 more polytechnic students were enrolled on courses in Business and Administration Studies than any other subject area (DFE, *c.* 1994), and the growth in these subjects distinguished the polytechnics and other colleges from the universities (Pratt, 1988). The mid-1970s saw recreation and leisure studies, sport studies and human movement studies established as degree subjects, and the first postgraduate diploma in recreation studies was established in 1976 (CNAA, 1978).

Business studies developed, too, at other levels under BEC and BTEC. At North East London Polytechnic, a client-related project programme on the Business Studies HND required students to investigate live business problems, including one with an Italian consulting group in Milan (BTEC, 1988).

BTEC also offered Continuing Education Certificates and Diplomas, aimed at adults in employment, offering an updating of management and IT skills; the polytechnics, often in regional consortia with further education colleges, took advantage of the versatility of the Continuing Education awards. For example, the Continuing Education Certificate in Management Studies (CMS) run jointly by Newcastle Polytechnic and Newcastle College of Arts and Technology, and involving students carrying out projects at work under the guidance of workplace mentors, was described as 'an excellent example of collaboration between colleges and industry' and of the 'mentor-principle' at work (BTEC, 1987a). Others used the CMS to develop courses tailor-made to the needs of particular employers; North East London Polytechnic worked with the GLC as part of its accelerated management development programme, and with the London Borough of Camden as part of its equal opportunities strategy (BTEC, 1984).

When BTEC launched HNDs in Information Technology and Business Information Technology (BIT) in September 1985, 11 polytechnics took part in the pilot. At Newcastle Polytechnic the course, which was oversubscribed, included six weeks of industrial training in the third year, with industrial placements between each year. At Teesside the Polytechnic secured IBM sponsorship for the HND in IT, and was able to offer students their own computer to take away. The HND in BIT worked with local employers to enable students to study subjects like robotics, installing computerized payrolls, and personnel management systems in a local insurance company (BTEC, 1987b).

While medical training remained in the university sector, increasingly the professions allied to medicine became degree subjects within the polytechnics, and new nursing degrees came into being at Manchester and Leeds (NATFHE, 1981). Traditionally physiotherapists were trained in schools attached to hospitals, with examinations organized by the Chartered Society of Physiotherapists. After an EEC draft directive requiring physiotherapists to have at least three years' theoretical and practical full-time study in university or a higher education establishment, the schools of physiotherapy were obliged to look elsewhere, and found the polytechnics more receptive to overtures than the universities; Sheffield School of Physiotherapy, for instance, transferred to the Department of Health Studies at Sheffield City Polytechnic (Brook and Parry, 1985). An example of further developments in the paramedical field was the transfer of nurse training from Wigan's Infirmary nurse training school to Lancashire Polytechnic in 1987.

It was not all expansion and innovation. Although engineering had been the mainstay of the precursor colleges of the polytechnics, it was, as we saw in Chapter 3, already a minority subject at the time the polytechnics were designated. In subsequent years it became even more so, as other subjects expanded whilst engineering enrolments stagnated. It was also something of an educational backwater.

Engineering had increasingly become a graduate profession during the 1960s. This trend had been reinforced in 1971 when the Council of

Engineering Institutions (CEI) decreed that a degree would be required for all future Chartered Engineers (with limited exceptions). In 1978 'enhanced' or 'enriched' engineering courses were introduced. Two of the 12 on offer were in polytechnics (Sheffield City and Trent), and combined an engineering and business education. The Trent course lasted five years leading to a joint award of BSc and BA Hons in Engineering and Business Studies. Generally, however, engineering education in polytechnics was conservative. A comparison between Lanchester (Coventry) Polytechnic and Loughborough University showed that the polytechnic engineering students received considerably more tuition than the universities, though in much smaller classes (Birch and Calvert, 1976).

The polytechnics had not long been established before another major report commented on the deficiencies of engineering education (Finniston, 1980). At the time, polytechnics had just under half the number of students studying in the university sector. Among criticisms of engineering education was that it was unduly scientific and theoretical; that newly-graduated engineers lacked awareness of 'real life' constraints; that they were oriented too much towards research and development work and were not interested in working in production or marketing functions (Finniston, 1980). Sandwich courses were generally perceived to suffer less from these flaws than their full-time equivalents. While the number of places available in engineering had expanded, it was less popular with potential applicants. To fill places, students with low academic achievement at A level had been recruited.

The concerns of the Finniston Report were recognized in the polytechnics. At a Polytechnics Engineering Conference in 1981, Hymans, a member of HM Engineering Inspectorate, described aspects of current engineering in polytechnics: the traditional industrial placement system was near collapse, the calibre of students was causing concern (many engineering students were in polytechnics as a second choice), in many institutions there was a static, ageing staff. Nor were the traditional strengths of the polytechnics evident. Engineering in polytechnics was perceived to be similar to universities: 'the style, objectives and content of engineering courses in polytechnics are not distinctive in general from those offered by many universities' (Hymans, 1981), though to some extent this derived from the criterion of comparability of esteem required by NCTA and CNAA; the professional institutions also had some responsibility. Thompson and Butler (1981) thought that perhaps the most distinguishing feature of engineering departments in polytechnics was the favourable student : staff ratio, typically 10 : 1. Nor did engineering departments in polytechnics generally have closer links with industry than university departments (Hymans, 1981). Hymans concluded that, for the 1990s, the polytechnics needed to establish characteristic features of their own to make them identifiable and attractive. It was a disappointing conclusion for institutions with an otherwise enviable reputation for innovation.

Finniston had recommended the introduction of a new structure of engineering education; the polytechnics responded with new courses. CNAA provided two new degrees, the BSc(Eng) and the BEng, both with an increased emphasis on engineering applications. In 1984, the CNAA policy statement on BEng and MEng was issued, and two polytechnics immediately announced their intention to develop enhanced degrees. By mid-1984, 60 per cent of CNAA engineering courses had been converted to enhanced BEng degrees. The new BEng degrees placed a greater emphasis on engineering applications and the wider dimension of the business of engineering. The MEng was to be a four-year first degree, and in 1984–85, ten polytechnics were running MEng courses linked to BEng, and three more had administrative approval (CNAA, 1986a).

But the problems of engineering education remained unresolved, in the polytechnics as elsewhere. Beuret and Webb (1983) found that, while there had been changes, the emphasis on theoretical rather than practical problems meant that graduates were often poorly equipped 'for the real tasks of engineering' and effectively debarred from many other roles. There was a need for engineers to have an understanding of the wide range of activities which constitute engineering and to see it in a business and social context. Engineers also needed to develop general intellectual abilities: to think creatively, to make critical, independent judgements, to define problems, analyse systems and arguments, solve problems, work with people from different disciplines and cultures, and prioritize and organize work. All of these, again, were characteristics of other polytechnic courses, but apparently lacking in engineering.

There were responses in the 1980s to these needs for more broadly educated engineers with analytic and management skills; NAB special initiatives led to the allocation of extra places and new courses within the polytechnics to meet industrial demands, for example, manufacturing systems engineering courses (HMI, 1989a) such as the BSc(Hons) Industrial and Business Systems at Leicester in 1987 (Rue and Christison, 1992) and an MSc at East London (Al Naib, 1992). There was growing awareness of Europe among polytechnic engineering educators, resulting in the introduction of international student seminars at Brighton (Miller and Holz, 1992) and the spread of languages in engineering courses. Languages had been part of the Combined Engineering Studies modular structure across a number of engineering disciplines at Coventry since 1973, though initial take up was low. In the 1980s, initiatives were more successful. Nottingham Polytechnic developed collaboration with institutions in France and Germany, and support from the Joint Study programme of the EEC and then ERASMUS (Palmer, 1989; Stewart and Jones, 1992). In the 1990s at Portsmouth Polytechnic, language courses for engineers more than doubled in one year (Hand, 1992); students worked on projects and completed industrial training years in Europe (Stewart and Jones, 1992). Similar new courses designed to prepare students to work beyond national frontiers were developed at, for example, Birmingham Polytechnic, where a degree in Export Engineering, combining engineering and information technology, business and management studies and a language, was validated in 1989 (McQueen and Rogers, 1992).

The growth and pervasive influence of information technology was the most important technological influence on engineering courses in polytechnics throughout the 1980s, and HMI (1989a) found that the development of more practical courses with a major commitment to computing technology was a feature of engineering in the polytechnics and colleges. Electronic Computer Aided Design (ECAD) was introduced in electrical and electronic engineering degrees, as at Portsmouth Polytechnic (Hunter and Miller, 1992). With the realization of the importance of technician designers in computer-aided design and management, particularly in civil engineering, seven of the polytechnics developed new TEC pilot Higher Certificate courses in 1981 (Cantor and Roberts, 1986).

Despite curricular developments such as these, the numbers applying to study engineering in polytechnics, as in the universities, continued to drop in the 1980s. In 1987–88, polytechnics failed to meet their NAB targets, and actual numbers of students studying engineering fell for the first time since NAB began funding (O'Leary, 1988). Twenty-five per cent of students failed to complete polytechnic courses (Manley, 1992). Nor were the developments without cost. The speed of technological advance, the pressures from industry and the engineering professional bodies to update and expand syllabuses, strained physical and human resources, and often led to overcrowded syllabuses which stretched students to the limit, particularly as these were often not the most able of their age groups, and led to wastage rates of up to 50 per cent (HMI, 1989a). For Wolverhampton, the impetus to update its engineering provision came from a threat from NAB to close down engineering which was perceived as 'narrow and inbred'; the Polytechnic set out to create a flexible, outgoing operation, building on its strengths in computing, business and design (Scott, 1987).

In 1988, an Engineering Council investigation again highlighted the need for the leadership, management and personal skills training in the undergraduate curriculum, and proposed the development of a new award comprising a general foundation of engineering study with a close integration of subject material. These 'integrated' schemes appeared more attractive to students than the earlier enhanced MEng degrees, but the professional institutions often failed to accredit them for Chartered Engineering status (HMI, 1992a). Sheffield City Polytechnic was one of the pilot institutions for the new Integrated Engineering Degree Programmes (IEDPs) (Robinson *et al.*, 1992).

By the early 1990s it was apparent that engineering education was yet again undergoing change, stemming largely from the rate of change of technology, in particular the greater complexity of systems and the information technology revolution. There was greater awareness of environmental issues and the socio-economic factors involved in the interaction between engineering, the environment and human systems (Duggan, 1992a). Conventional, single honours courses were being questioned, as well as the separate development of technician and professional engineering courses. Employers expressed the wish for more broadly based engineers (Manley, 1992). At Portsmouth, this led to the introduction of an integrated, modularized and credit-rated programme, underpinned by an engineering faculty foundation course in 1991, replacing the existing pattern of largely stand-alone courses (George *et al.*, 1992).

Polytechnic engineering departments were also involved in collaborative research and consultancy projects with local industry, and internationally, as in the collaborative railway roller rig project between the Department of Mechanical Engineering, Design and Manufacture at Manchester and Southwest Jiaotong University in China (Iwnicki and Shen, 1992). The formation of Teaching Company schemes, to develop partnerships between academic institutions, often provided projects for research students and undergraduates, as at Thames (Vaezi-Nejad, 1992) and Portsmouth (Hornett *et al.*, 1992). At Thames, the Research and Development activities in the Engineering School had expanded rapidly during the late 1980s (Vaezi-Nejad, 1992). At Portsmouth, the Polytechnic Enterprise company set up an engineering division, undertaking research, consultancy, designing, testing, prototype manufacture and the provision of short courses to industry (Collie *et al.*, 1992). HMI (1989b) concluded that since the polytechnics had been designated there had been a steady increase in the volume of research.

## Multi-disciplinarity and modularization

One of the early challenges from the polytechnics to the traditional subject-based degree to which Robinson (1968) took so much exception came with the submission to CNAA of interdisciplinary and modular degree schemes in the early 1970s. The two ideas often went hand-in-hand but were distinct. Interdisciplinary or multidisciplinary courses developed from the combination of previous discrete subjects of study. There were already some such degree courses in the universities; HEQC (1994) records that the first unit-based degree scheme developed in the science faculty of the University of London, admitting students in 1967. Well established in the USA, modularization was the division of the study programme into standard-length units or 'modules'; it obviously lent itself to interdisciplinary courses and was mainly associated with them, but could equally be utilized for single subject courses. Modularity soon became associated with the polytechnics.

As with the creation of new subjects of study, the polytechnics encountered hesitancy with their validating body, the CNAA. In 1968, when Sir John Cass College, a constituent college of the proposed City Polytechnic, submitted an interdisciplinary degree scheme, the CNAA had no mechanism for handling it, and the submission did not proceed. Once the Polytechnic was formed, the proposed scheme was extended into business studies, and in 1971 a new proposal was submitted to the CNAA in specified subjects and in combined studies. Discussions continued for over a year and, in order to process the proposal, CNAA was obliged to establish a new combined studies group.

The scheme was based on semesters, with both whole and half modules. For students the scheme offered a new range of freedom and choice. For the Polytechnic, the scheme's potential for unconventional entry to specialization meant a considerable increase in the recruitment base. Such was the concern in CNAA about the idea that when a visit to the Polytechnic eventually took place in 1973, there were 65 members in the visiting party (Theodossin, 1986). The course eventually started in autumn 1973. For the advertisement in *The Observer*, the term 'modular' was coined, and has since been adopted to describe all such schemes.

Getting initial approval was not the final hurdle. In 1977, when the course was submitted for revalidation, two one-year extensions were given before a five-year validation was finally achieved. Permission for 'majoring' (in a particular subject) was given, but at a price: the routes through the degree were much restricted and laid down by subject boards; students wishing to major were required to propose their entire programme of study by the end of their first year. Many were worried by the new development. Negotiations with professional institutes for exemption if appropriate modules were completed provided a challenge to traditional courses. There were concerns about backdoor entry, as a student might not have the 'right' A levels for a single subject course – and they could still gain exemption from the Royal Institute of Chemistry's Graduate Membership examinations (Theodossin, 1986). Nevertheless, by the mid-1980s the modular scheme represented 40 per cent of the Polytechnic's first and higher degree work (Theodossin, 1986).

A study of unit and modular schemes in the universities and polytechnics in the early 1970s found that the City of London Polytechnic's was 'the most advanced scheme we encountered' (Group for Research and Innovation in Higher Education, 1976), but others developed apace. Middlesex Polytechnic secured CNAA approval for a humanities degree constructed on a modular basis in 1972. Students enrolling on the BA or BA Hons in 1972 could choose 12 courses from 130 on offer in eight main fields of study (Proposed Middlesex Polytechnic, 1972). By the end of the decade, 25 English polytechnics had one or more modular degree schemes, and Hatfield had committed itself to total modularization, though interestingly it is the one that has most fostered its specialized degrees. Theodossin (1986), surveying the modular scene in 1978–79, found that the majority of the courses were not linked to other awards, but that under 15 per cent were available on a part-time basis. Modularization was not restricted to degree courses. Indeed, in some of the polytechnics it was associated with BTEC programmes, since BEC and TEC introduced units, modules and credit to their courses in 1974.

The biggest, most extensive and most innovative of the polytechnic modular degree schemes was at Oxford Polytechnic. Oxford Polytechnic's was the first multidisciplinary degree course to be validated by CNAA. The Oxford scheme was based on fields of study which grouped associated modules together to provide coherence. While students were required to choose specific fields of study, up to a third of their time could be spent on subjects outside their chosen fields. The scheme was submitted to CNAA in 1972, and the first students admitted in 1973. The first course to start was a BSc. In 1974 a BA was added, joined by a BEd in 1975. In 1976 four more fields entered the scheme. Initially full-time, part-time and mixed mode provision was made in 1978 (Theodossin, 1986). By 1983–84 all major areas in the polytechnic were included, apart from Architecture and Engineering (Watson, 1985). From seven fields of study in 1973 the course had grown to 43 in 1988 (Watson *et al.*, 1989).

The scheme proved immensely popular with students, each year receiving increased applications, so that in 1988, 20,000 applications were received though only 923 students were admitted (Watson *et al.*, 1989). Members of non-modular degrees made use of the modules for breadth requirements; foreign, disabled and local residents in full-time employment, and Polytechnic staff themselves were also able to make use of individual modules as appropriate.

Despite this success at Oxford, the response from CNAA and others was less than enthusiastic; the modular civil engineering scheme at Oxford met with such resistance that it had to be recast in a more orthodox form (Theodossin, 1986). As Watson, protagonist of the Oxford scheme put it, the interest in other institutions and the high demand for places on the course had 'not been matched by correspondingly positive attitudes among those responsible for its validation (CNAA), its approval (the DES) or its funding (NAB)' (Watson, 1985). He concluded that the constraints on innovation in the public sector were less within the institutions than with the external bodies controlling them (Watson, 1985).

Despite the constraints, the 1980s saw a continuing growth of modular schemes (HMI, 1991a) and of combined studies courses offering multidisciplinary and interdisciplinary study. Students were able to combine major and minor subjects, or retain joint/combined subject programmes; elective programmes were developed; and interim awards were available through the DipHE. HEQC (1994) found circumstantial evidence suggesting that the demand for, and practice of, internal mobility and transfer were extensive. At Liverpool Polytechnic, monitoring of the undergraduate modular credit scheme indicated about a quarter of students retained flexibility over their destination qualification, rising to 40 per cent three years later as the scheme matured. The development of the schemes at Wolverhampton, North London, Central London and Manchester in the 1980s was directly influenced by the 'coalition' of modularity, DipHE and access (HEQC, 1994).

It is hard to identify the precise extent of the developments; published data generally distinguish as combined or multidisciplinary courses only those which cross major subject boundaries; many courses within the major subject groups were both multidisciplinary and modular. CNAA data, for example, show that fewer than 10 per cent of degree courses in 1990 were classified as 'combined or general courses', though there were still almost 150 of these in CNAA institutions. Yet by 1984–85, multidisciplinary courses represented about two-thirds of CNAA provision in arts and humanities (CNAA, 1986a). Again in 1993, 19 of the 34 former polytechnics specifically listed multidisciplinary first degree courses (CDP, 1993), but most in fact offered multidisciplinary or modular programmes within broad subject domains. By comparison, only a third of the universities had taken a decision to modularize by 1992 and only nine of these had implemented that decision (HEQC, 1994).

Despite its popularity, modularity continued to be controversial. Squires (1986) found considerable concerns amongst staff in the Polytechnic and university institutions in Manchester about the coherence of courses; there were, elswhere, claims that modular degrees were 'rag-bags' involving the award of 'Green Shield' stamps (HEQC, 1994). There was not always consistency of credit 'tariffs'. Schemes raised inconsistencies in marking in different subject areas (Gibbs *et al.*, 1996); they often increased the burden of assessment and examination on students and staff. The costs and complexity of the student management system were substantial and few institutions could afford to change in one go (Watson *et al.*, 1989). As institutions began to settle for less ambitious alternatives, and subject loyalties reasserted themselves, some modular schemes became mechanistic. Some schemes were 'phantom', implying choices that could not be delivered (Watson *et al.*, 1989). There were problems of funding institutions using this unusual form of organization, as funding mechanisms used student numbers in subject areas.

Nevertheless, looking at humanities and social sciences first degree courses in the polytechnics and colleges in 1991, HMI (1991b) concluded that they had developed 'distinctive characteristics which make them different from, and complementary to, courses in the university sector'. The development of combined studies was in part due to resource constraints, but there was also an impetus to design courses offering students greater choice and which took better account of contemporary society. HMI (1991a) cited degree courses in industrial relations, urban studies, public administration and media studies as examples of these. There were relatively few single honours degrees and most students followed combined studies or modular degree studies. As one former polytechnic director put it, the polytechnics destroyed the single honours degree. More constructively, perhaps, Waterhouse (1986) used the term, 'culture of negotiation' to describe the principles underlying modular schemes, enabling students to have genuine involvement in their own learning careers. This principle was taken further with the development of the idea of credit-based education.

## Credit accumulation and transfer

In the early 1970s, once students were enrolled on a degree course, most of which were single subject, there was little possibility of transfer to another course. While CNAA would receive sympathetically individual applications for recognition of previous periods of study and examinations for exemption from part of a CNAA course, few students took advantage of this, and course tutors generally actively discouraged this transfer. Exceptionally exemption was given to HND holders. Voices in the polytechnics were raised deploring the lack of flexibility in the system (Brosan, 1971), and Stoddart (1972) argued that there was little opportunity for transfer or credit. The advent of the DipHE, with the concept of deferred choice explicit in the James Report, raised the issue of transfer with increased urgency, as course tutors and diplomates faced the barriers erected by existing degree courses. To meet the needs of diplomates, one-year degrees were developed, such as the degree by independent study at NELP which first accepted students in 1976 (Robbins, 1988). Sheffield Polytechnic proposed a business studies course to CNAA based on 14 'units', which could be taken in a minimum of four years and maximum of seven. Other schemes were looking to give credit to holders of HNDs, Open University credits and various professional qualifications (Stoddart, 1972).

One of the most significant influences on the idea of credit transfer was, however, from outside the polytechnic sector, at the Open University, which since the early 1970s had offered credit-rated units through which students could accumulate degrees. In 1977, a reciprocal arrangement for credit recognition was agreed between the Open University and CNAA, setting a precedent for formal recognition of credit, allowing transfer into the second and third year of degree courses. But the development of modular courses, which afforded considerable flexibility for students within the structure, did not in the first instance offer opportunities for transfer between institutions. However, the momentum for credit accumulation developed as modular schemes increased.

CNAA accepted that there was a case to be made for the creation of a National Transfer Agency (CNAA, 1978) and the Oakes Working Group recommended a study of the feasibility and cost of a credit information service (Oakes, 1978). This inquiry was set up by the Minister under Peter Toyne in 1977 and reported in 1979 (Toyne, 1979). Toyne found some, but not overwhelming, interest within institutions and outlined potential problems, but recommended the establishment of a national information system, which was set up by DES as ECCTIS (the Educational Counselling and Credit Transfer Information Service).

The Toyne Report drew together the ideas of modularization and credit transfer and these, combined with the developing concern for access, eventually prompted further developments. NAB and UGC separately, and then jointly, took decisions to report on continuing education. The NAB working party report (NAB, 1984) identified elements necessary for further development: a common credit framework; modularization of courses; accreditation of prior and experiential learning; open learning; and use of credit transcripts, but warned against 'grandiose imposition of a credit system,' preferring to recommend adoption of the principle of credit accumulation and transfer.

The similarity of objectives of CNAA and NAB for credit-based systems encouraged their development in the public sector, causing credit to be seen by many universities as a 'polytechnic activity' (HEQC, 1994). In 1984, CNAA proposed the establishment of an advisory and brokerage service, as a five-year pilot project, initially restricted to London. HEQC (1994) saw the CNAA CAT(Credit Accumulation and Transfer) scheme as a deliberate attempt to give students more freedom and choice, to promote inter-institutional collaboration, wider access, and to establish a triangular relationship between the student, course and employment. The scheme was finally launched in Spring 1986. CATS proved successful in promoting the development of credit systems in higher education and particularly in persuading employers and some professional bodies that accreditation of employee training was an attractive proposition. Sheffield, South Bank and Portsmouth Polytechnics, for example, developed schemes with local employers.

The CNAA CAT scheme possessed a unique advantage in that it held the degree-awarding powers of its member institutions and could itself make awards. Through its brokerage service to prospective students it could provide advice and negotiate progress through the programmes of member institutions. As it was advisory, it did not replace or constrain the development of individual institutional schemes. It advised up to 500 students annually, most of whom subsequently approached individual institutions. Between 50 and 100 remained directly registered with CNAA, where their package of credits covered achievement at more than one institution. By 1991, some 19 universities had signed agreements with CNAA to cooperate with its CAT scheme (or the equivalent SCOTCAT scheme) and others were accepting students who had gained credit in other institutions (Davidson, 1992). An MSc course at City University was the first to have complete credit transfer with the CNAA scheme so that polytechnic students could have up to half of the course remitted for their studies. The CNAA CAT scheme also adjudicated the quality of learning undertaken on employer courses and professional training, thus calibrating credit for 'off-campus' learning achievement. HEQC (1994) found that one of its most enduring achievements was 'its success in broadening the definition of legitimate learning to achievements gained in work and professional practice'.

The polytechnics were at the forefront of developments in credit accumulation and transfer. They provided 'naturally fertile grounds' for the further establishment of modularity and credit-based systems (Fulton and Ellwood, 1989). Developments included PASS (Polytechnic Associate Student Scheme) at Newcastle, the first such overt credit scheme outside of the Open University, introduced in 1985, and then widely copied for example at Sheffield, Leeds and East London Polytechnics (HEQC, 1994). At Lancashire Polytechnic, the combined studies programme and LINCS (Lancashire Integrated Colleges Scheme) introduced an institution-wide scheme; a similar scheme was introduced at Anglia Polytechnic. Access consortia involving local colleges developed, as did 'franchising' of courses coupled to internal credit-based schemes. Some institutions placed greater emphasis upon the credit transfer of second-chance students, via specifically designed Access courses. In London, particularly at Thames, and then at North London, polytechnics were involved in a network of such courses.

The most successful of the various regional consortia set up in 1986 as a response to the CNAA CAT scheme was the South-East England Consortium (SEEC), initially comprising 17 public sector institutions, with some universities joining in the 1990s. Committed to the promotion of credit transfer between regional institutions, it offered the opportunity for 'module borrowing' (taking modules from other institutions and counting them towards a registered programme). Elsewhere consortia operated exclusively in subject-based areas (CCETSW, Health Services), covering higher and further education nationally, regionally and locally (National Open College Network, Open College Federations and London Together), as well as the trans-European Credit Exchange and Transfer (TEXT) consortium.

It was not all good news. HEQC (1994) found minimal evidence of credit transfer between higher education institutions: 'Credit transfer in the United Kingdom remains heavily circumscribed by traditions, regulations and the absence of a culture of mobility and choice'. Only 30 students took up the module-borrowing option that the South-East England Consortium had negotiated between Middlesex and City Polytechnics in 1987–88, and these arrangements lapsed, SEEC directing its attention far more to its role as a development agency, encouraging individual institutions to develop their own initiatives.

The polytechnics were involved in the development of Open College federations, starting in 1978 with the formation of the Open College of the North West, based on the University of Lancaster, Preston Polytechnic and a number of further education colleges, with the intention of promoting access to higher education for mature and second-chance students. Other Open Colleges developed at South London, and Manchester's (established in 1981) has been influential as a model for the large number of Open College Federations that now exist (HEQC, 1994).

Other polytechnics joined with corporate employers in the formal accreditation of employee training. The first such was IBM with Portsmouth; Thames then became active in this area, forming partnerships with the Woolwich Building Society, Allied-Lyons and the Brewers' Society. At Wolverhampton an extensive modular programme was supplemented by a CAT scheme for both internal and external learning. Thames Polytechnic had a credit system without modularity, emphasizing the possibility of using credit in INSET and employee accreditation. The idea was taken with the polytechnics into their university status. As HEQC (1994) commented, 'One of the most significant developments in the new universities' was the attention paid to the promotion of work-based learning for academic credit, covering sandwich placements, professional practice and occasionally the year abroad for language students.

Liverpool Polytechnic attempted the most ambitious synthesis of credit, modularity and an outcomes-led curriculum in an institution-wide integrated scheme, and sharing the credit system with the local Open College Federation. This developed a comprehensive regional credit framework. The momentum towards modularity and credits as organizing concepts of institutional life continued as the polytechnics acquired university titles. At Middlesex and East London, combined studies programmes have developed into institution-wide, comprehensive schemes. Fulton and Ellwood (1989) confirmed that, 'For most of the decade the main institutional developments for extended access, flexibility and choice in higher education were dominated by the polytechnics'. By contrast, the older universities did not choose to adopt credit as an organizing tool (HEQC, 1994).

## Specialization

Not all polytechnic courses followed the line of development leading to modularity and interdisciplinarity. At almost the opposite extreme, highly specific courses were developed, for particular vocations or professions, potential students or even specific employers. An early example was at Sheffield Polytechnic which, recognizing the needs of training officers for more advanced courses, developed Certificate and Diploma courses in Training Practice and Management (Boydell, 1970). Plymouth Polytechnic continued to meet traditional local demand for Nautical Studies and Fisheries Science (NATFHE, 1981). This Polytechnic also responded to the increase in inshore and offshore civil engineering projects by developing a module on underwater technology as part of its BTEC HND in Civil Engineering, a module unique to the Polytechnic.

In the 1980s, degrees were developed to meet the needs of particular employment groups, such as the BA Hons in Criminal Justice Studies at Newcastle, aimed at serving police officers (CNAA, 1987a) and in Police Studies at the Polytechnic of Wales (CNAA, 1986a). The polytechnics also developed HNCs in police studies in response to approaches from the police, and at the Polytechnic of Wales, officers, having followed the HNC, could transfer to a part-time BA in Public Administration.

The motives were not always altruistic; throughout the 1980s, the polytechnics were seeking to attract finance from alternative sources, both by marketing existing courses and by developing courses aimed at particular market needs (NATFHE, 1981). Often polytechnics set up short course units for income-generating courses, which were usually also a means of meeting local needs. For example, Leicester Polytechnic ran the course 'Principles of knitting' for quality controllers and buyers in the local knitwear trade; North Staffordshire developed training and retraining for the local ceramics industry (NATFHE, 1981). In response to increased unemployment in the 1980s, Newcastle, Sunderland and Teesside Polytechnics collaborated in an Open Prospect programme for unemployed managers (Trowbridge and Stephenson, 1984). Coventry Polytechnic pioneered courses for managers in the Soviet Union, gaining financial sponsorship in 1989 to conduct short management courses in Moscow (Hibbert, 1990).

In the climate of potential shortage of 18-year-olds in the 1990s, Huddersfield Polytechnic replaced a History and Politics course by more narrowly focused Historical and Political Studies, emphasizing the skills associated with study of academic disciplines and with the potential for work experience and work-based studies (Roberts and Mycock, 1991). The tradition of response to specific local needs was maintained at City of London Polytechnic; for example, in 1991–92 it was offering a range of City and Guilds craft courses in upholstery, cabinet making and silversmithing, and Polytechnic Certificates and Diplomas related to shipping, insurance studies and commodity broking. It had a wide range of professional awards, including those of the Law Society, Institute of Taxation, Institute of Packaging, and Institute of Chartered Shipbrokers (Korving, 1991).

## Art education

More than half of the polytechnics (17) proposed in the 1966 White Paper incorporated colleges of art. It was not a suggestion that met with universal approval in the colleges and it was against the majority opinion and advice of the National Council for Diplomas in Art and Design (NCDAD). Art education, after a period of neglect in the 1950s, was beginning to emerge as a distinctive sector in those art colleges independent of technical colleges (Robinson, 1968). It had its own qualifications as well as a distinctive culture, often at loggerheads with that of the technical colleges. The polytechnic policy helped to precipitate major unrest in some of the colleges, which had implications not just for art education, but the inclusion of art and design in polytechnics, in the end, assisted its achievement of international status.

At the time of the establishment of the polytechnics, education in art and design was almost entirely an activity of the public sector, but it was carried out at a variety of levels in a great variety of institutions. The Robbins Committee identified 165 art schools in the further education sector in England and Wales (Robbins, 1963) though not all offered higher education courses. Some technical colleges had schools or departments of art within them. About 8,000 students were studying at advanced level, most for a National Diploma. The Royal College of Art was centrally funded and from 1967 awarded degrees. Art education also took place in teacher training colleges (for aspirant art teachers). The role of the universities in art education *per se* was limited; as Field (1970) put it: 'There are universities where art is practised, universities where its history is studied, one university where an art course integrates theory and practice . . .' The universities, too, influenced colleges of education. The role of the universities was constrained by the breathtaking assumption of the Robbins Committee: '. . . degrees are not appropriate to mark achievement in executive subjects'.

There were only 'aspects of art' where degrees could appropriately be given. In the late 1960s there were only ten universities offering undergraduate courses in art and design, with fewer than 900 full-time undergraduates (Francis and Warren Piper, 1973). This did not, however, prevent the Committee from asserting that the university schools (with the Royal College of Art) were 'the apex of the system'.

Change was already taking place in art education when the polytechnic policy was established. In 1960 the National Advisory Council on Art Education (NACAE), set up in 1959 under the Chairmanship of Sir William Coldstream, issued its first report advocating the replacement of the existing National Diploma by the Diploma in Art and Design. The proposed Diploma was to offer art and design in a broad general context of defined areas, where the National Diploma was vocationally oriented, entailing the pursuit of a chosen narrowly defined studio activity. Conceived as a 'liberal education in art' of first degree standard, the new diploma would set higher academic standards and include the compulsory study of the literary humanities, especially art history. The new Diploma was to be degree-equivalent (the universities still retained their stranglehold on the title 'degree', as they had with the Diploma in Technology); academic respectability was built-in through enhanced requirements for entry, complementary studies with written exams, and the separation of diploma and vocational studies (Students and Staff of the Hornsey College of Art, 1969).

The NCDAD was established in 1961 to review submissions for the new Diploma in Art and Design (DipAD) and to validate suitable courses. Of the 87 colleges which initially submitted proposals, only 29 eventually succeeded in gaining approval to run the DipAD from both NCDAD and the Ministry (Ashwin, 1975). Most of these were to be incorporated into the polytechnics.

Within the art colleges a number of tensions existed. Many were experiencing problems with implementing the new Diploma and with resources. Within the colleges, principals were concerned with developing a 'successful' art school; local education officers were preoccupied with standards, while the priority for progressive teachers lay in developing novel and creative ideas. Many teachers were part-time, in the tradition of art education, and barely in touch with the principal and the full-time staff who clustered around administration (Students and Staff of the Hornsey College of Art, 1969). Tension erupted in student occupations at Hornsey College (due to be incorporated into Middlesex Polytechnic) and Guildford in 1968.

Although it was the issue of the Student Union sabbatical and the freezing of Student Union funds which initially triggered the student occupation at Hornsey in May 1968, which was to last 6 weeks, the incorporation into the Polytechnic was undoubtedly a factor, and as the occupation became a 'teach-in', the debate encompassed the participation of students and staff in decision making, and their freedom to formulate, develop and explore ways of achieving educational aims.

The debate started at Hornsey extended far beyond the College, stimulating discussion in other colleges and bringing about a national debate on art education. A Joint Committee of NACAE and NCDAD was established in October 1968 to review the whole situation. While this major review is attributable to the disturbances, it makes only passing reference to them. The most important alteration proposed is the division of the Diploma into two types of course: type A, more flexible than the current diploma, and type B characterized by its scientific, technological or professional content, and directed towards industrial or professional practice. No relaxation of the entry requirements was made (Joint Committee of the National Advisory Council on Art Education and the National Council for Diplomas in Art and Design, 1970).

The creation of the polytechnics had further implications for art education. It led both NCDAD and the CNAA to consider the uncomfortable juxtaposition of the diploma courses in art with degree courses in polytechnics. They recognized the need 'for close cooperation' to deal with the development of degree courses containing an art and design element, and with the possibility of DipAD courses with a significant technological content (CNAA, 1970). In 1972 both sides agreed to explore the possibility of a merger (CNAA, *c.* 1973a). On 1 September 1974 NCDAD became the new Committee for Art and Design of the CNAA, finally fulfilling an ATTI (1965) recommendation. Many members of NCDAD continued to serve with CNAA. The result of the merger was the translation of the DipAD into a Degree with Honours. By the next year, 1975–76, there were 157 CNAA first degree courses in art and design, with over 12,000 students; 351 former students exchanged their DipAD for a BA degree (CNAA, 1977).

Within the polytechnics, the initial hostility of the art colleges to incorporation weakened as they bowed to the inevitable, seeking protection for art and design in the new structures (Silver, 1990). The Principal of the Liverpool college wrote: 'there will be complete autonomy in respect of the academic work of the Faculty of Art and nothing that has been said causes me any misgivings on this score' (quoted in Silver, 1990).

The polytechnics had absorbed the larger part of Diploma-level art education. In 1970, there were nearly 3,700 students on courses leading to the DipAD in polytechnics, just over half (53 per cent) of the total number of DipAD students in England and Wales (DES, 1973). They consolidated this share in later years. By 1974, when the courses became CNAA degrees, the polytechnic enrolments had risen to over 5,000, nearly 60 per cent of the total (DES, 1976). By 1992, there were over 22,300 students on creative arts and design courses (DfE, *c.* 1994). Nineteen of the 34 polytechnics offered fine art degree courses and several others offered options on other programmes; 24 offered design degrees; 13 offered degrees in music or the performing arts, with others again including these subjects within modular or interdisciplinary schemes.

Given the turmoil at its creation, the development of art education within the polytechnics appears to have been less controversial. Subsequent literature shows less concern with identity within institutions than with the direction of art education in general. In 1973, Jones concluded that the amalgamation had been favourable for the design area, but less propitious for the fine arts (Jones, 1973). Fine art departments found themselves answerable to governing bodies which, while sympathetic, by their very nature were precluded from understanding the necessary creative freedom which fine art required to flourish. The criteria of validation for the bulk of polytechnic disciplines of industrial, commercial and social acceptability and utility were different from and inimical to fine art (Jones, 1973).

Nevertheless, the debate about the content and philosophy of art education in the polytechnics rumbled on, related to broader issues, including CNAA's educational philosophy and the vocational directions of art students. The old Summerson requirement of complementary studies, including the history of art and design, in art and design degrees was a matter of continuing debate throughout the 1970s, as CNAA visiting parties sometimes tried to insist on it, despite its inappropriateness under CNAA rules. CNAA announced in 1979 arrangements to allow institutions to propose modifications (CNAA, 1980).

The incorporation of art education into polytechnics was expected to have educational implications. Bethel (1977) predicted the development of multidisciplinary courses, particularly DipHE and BEd with art and design components, and modular and performing arts courses, which would break down the NCDAD concept of chief studies, and four 'main' areas. Part-time courses would develop (there were no part-time courses then); computer use would increase (and probably become integral); complementary studies would be redefined; and research would be developed.

Part of Bethel's prediction was borne out a year later when CNAA held a conference to consider approaches to courses other than specialist honours degree courses and to establish guidelines for validation. Art and design were increasingly part of proposals for BEd and DipHE programmes as well as for unclassified and honours degree schemes of a multidisciplinary or generalist kind (CNAA, 1978). Growth of courses and student numbers in part-time mode were also evident in the early 1980s (CNAA, 1983), but by the late 1980s, only 9 per cent of the provision was part-time (HMI, 1992b).

Allen (1982) reported that polytechnics, 'have naturally set up degrees reflecting the administrative structure and historical composition of the establishment'. They offered greater opportunity for multidisciplinarity and, in performing arts, had rejected single honours degrees in favour of 'some amalgam of the performing arts'. Moreover, they had 'introduced elements of original creative work into degree syllabuses,' an achievement which directly challenged the Robbins' assumptions noted above and for which both they and the CNAA could claim to have achieved some of the Robinson ambitions for educational change.

But fine art continued to sit uneasily within frameworks designed for academic study, particularly in the context of research degrees, and the possibility of creating a distinctive research award to cover outstanding achievement in the creative arts exercised the CNAA's Committee for Art and Design in 1980 (CNAA, 1980). In the late 1970s, a searching review of postgraduate courses in art and design was undertaken by the CNAA, prompted by the perception that the change from NCDAD to CNAA had resulted in substantial increases in teaching on art and design courses, and what some regarded as a difficult switch from a professional to an intellectual approach. The review was highly critical of some of the courses in polytechnics, and identified the lack of suitably qualified and experienced staff. Cantor and Roberts (1986) reported that, following the review, the quality of courses improved.

Debate about the purposes of art education continued during the 1980s. The nature of fine arts degrees was questioned as being too focused on treating students as potential professional artists with a 'narrow preoccupation with "gallery art",' although this was realizable by only a few (NAB, 1985). Fine arts students were perceived to graduate without the transferable skills that would benefit them in future careers. NAB (1985) proposed, 'that the nature, structure and balance of higher education provision in the Arts Programme area need to be broadened'. It would not just be specialist fine art, but more general, leading to a broad understanding of visual and applied arts, which would place greater emphasis on transferable intellectual and personal skills, greater choice, the development of interdisciplinary approaches and credit transfer. Two years later, the NAB Art and Design group was still arguing that fine art courses showed a 'narrow professional vocationalism' (NAB, 1987a).

Among the institutional responses to NAB (1987a) were 18 from polytechnics. These revealed that developments were responding to the criticisms of narrow vocationalism, and bearing out, albeit belatedly, the Bethel vision of the mid-1970s. Most fine art courses had links with other courses (such as education) within the polytechnics. Many were strengthening community links. Six polytechnics were introducing part-time routes; four were introducing placement opportunities into degree schemes. Modularity was gathering speed within art and design, with seven polytechnics proposing its introduction, and short course work, such as INSET, was being extended in five polytechnics (NAB, 1988).

By now, 23 polytechnics were offering art and design, most offering both art and a range of design specializations at postgraduate, degree and (less frequently) HND level. Polytechnics provided nearly half of the public sector provision (NAB, 1987a) and thus nearly half of the total; 90 per cent of higher education in art and design was in the public sector (HMI, 1992b). HMI, reporting on inspections over the last five years in 1992, concluded that 'a well earned reputation for quality has been largely sustained by polytechnics and colleges' (HMI, 1992b). The polytechnics had benefited from art's distinctive ethos. They, in turn, could claim to have brought art education into the mainstream of higher education, and to have integrated it with other subjects. But art education was perhaps less distinctive at the end of this process than at the beginning.

## Teacher education

Teacher education in England and Wales had been a binary system *par excellence*. There were two routes to become a teacher, deriving from historic, largely class-based divisions. The system had its roots in the nineteenth century. Children of the well-to-do were taught by university graduates in the grammar schools. As elementary education for all was introduced, teacher training colleges developed for their teachers. In time, the universities offered postgraduate courses in education for graduates, mainly for secondary teaching; the teacher training colleges run by voluntary bodies and increasingly by local authorities offered a certificate largely for primary teachers. By the early 1960s, the divisions had barely changed; the main developments were that universities also trained graduates to be primary teachers; teacher training colleges also trained secondary teachers. The academic content of college courses was overseen by university institutes of education. Uniquely, numbers of students entering initial teacher training courses (on both routes) were controlled by the government.

The Robbins Committee in 1963 recommended the abolition of the administrative binary line, proposing that the colleges become incorporated into university schools of education, but it retained the historic academic division, recommending that only students qualified to enter a degree course should go on to a new four-year degree course, the rest relegated to a three-year certificate. Graduates would still be able to take a one-year postgraduate teacher training qualification. As with many other Robbins recommendations, the incoming Labour government in 1964 took a different view. It proposed a binary solution.

Its first step was to establish departments of education in five regional technical colleges in 1965, following a proposal made by, amongst others, Eric Robinson (NACTST, 1965). The ostensible arguments were to increase opportunity for students, to utilize the facilities of technical colleges and to increase teacher supply in technical subjects. It offered, too, attractive possibilities of diversifying teacher education (Locke *et al.*, 1985). It meant that at least some of the proposed polytechnics would have teacher education, supporting their development as major centres of higher education.

All five of the original education departments in technical colleges were expected to be and, subsequently became, part of polytechnics. By 1970, they were augmented by two more. At first their courses were still university validated. The expectation in the DES was that these departments would seek CNAA validation for their courses. Yet, as with other areas of academic development in the polytechnics, the CNAA had at first been reluctant to act. It set up a Committee for Education in 1966 to advise on policy, but trod delicately in this new field, and the first approvals of initial teacher training courses were not in polytechnics (though there was an earlier in-service BA course at Enfield College, a constituent college of Middlesex Polytechnic). Eventually, it became clear that the CNAA processes offered greater freedom for polytechnics to develop their own teacher education courses than under university validation. Locke *et al.* (1985) argued that some of the subsequent innovation, diversification and capacity for change in teacher education can be attributed to this modest experiment.

The division of the teaching profession by graduate and non-graduate status came into question in the 1960s. Increasingly there were calls for teaching to be a graduate profession, and for opportunities for students to delay decisions about entry to the profession until later in their studies. As it was, a BEd degree offered few other vocational possibilities. It was also apparent that a falling birth rate would lead to a reduced demand for teachers, and therefore to a contraction and rationalization of the colleges of education. There was widespread criticism of the isolation of the colleges, their 'cloistered' ethos and their lack of educational development (Kemble, 1971). The then Secretary of State for Education and Science, Margaret Thatcher, appointed a Committee of Inquiry into the Education and Training of Teachers under the chairmanship of Lord James of Rushmore to review the content and organization of teacher education.

The James Report, in 1972, made a host of recommendations, many of which were not taken up by the government. But some key ideas found their way, modified, into subsequent policy. James argued that the higher education and training of all teachers should extend over at least four years; the first 'cycle' leading to a Diploma of Higher Education (DipHE); initial teacher training in the second cycle should last at least two years, and lead to a new professional degree of BA (Education) ( James, 1972). A new national council, with regional tiers on which universities and polytechnics would be represented, would award the DipHE, BA (Ed) and an MA (Ed), thus ending the binary academic divide. The James Report was followed quickly by a White Paper, *Education: A Framework for Expansion* (DES, 1972). This accepted the idea of teaching as a graduate profession, and the proposal for the DipHE, but as a general qualification. It rejected the BA (Ed) and the new national and regional machinery.

The main impact of the White Paper on teacher education was the reorganization of the colleges of education and this in turn brought polytechnics a considerably increased role in teacher education. As we saw in Chapter 1, 37 colleges merged with 23 polytechnics in the 1970s. In the first four years of the 1970s, numbers of students on initial teacher training courses in polytechnics hovered around the 1,000 mark. In 1975 they jumped to over 10,000. In the 1980s, although overall numbers in training were reduced the polytechnics' share of the total increased (Table 4.1). As a result of reorganization, CNAA became the validating body for about half the training places in England by 1978.

After James, there was a flood of proposals to the CNAA for BEd courses from the polytechnics. Silver (1990) records that Trent Polytechnic and the Polytechnic of North London had come forward with full-time proposals, considered in October 1972. There were joint proposals from Hatfield Polytechnic and two colleges of education. Other polytechnics had schemes in development to link education with other subjects, like science (Sunderland

*Table 4.1* Teacher training: UK students

| | *Postgraduate* | | | *BEd* | | | *All forms of ITT* | | |
|---|---|---|---|---|---|---|---|---|---|
| | *Polytechnics* | *Colleges* | *Universities* | *Polytechnics* | *Colleges* | *Universities* | *Polytechnics* | *Colleges* | *Universities* |
| 1978 | 1122 | 2693 | 5039 | 6247 | 18156 * | 757 | 11709 | 31548 | 6376 |
| 1980 | 1571 | 3607 | 5538 | 4854 | 14016 | 998 | 7837 | 20902 | 7020 |
| 1981 | 1601 | 3510 | 4819 | 4721 | 13551 | 1179 | 7526 | 18422 | 6502 |
| 1982 | 1311 | 2661 | 4110 | 5085 | 13907 | 1080 | 7106 | 17346 | 5913 |
| 1983 | 1234 | 2100 | 4042 | 5882 | 13467 | 1030 | 7794 | 16414 | 5819 |
| 1984 | 1298 | 2229 | 3793 | 6366 | 14095 | 1029 | 5631 | 8165 | 17110 |
| 1985 | 1499 | 2216 | 3714 | 7159 | 14784 | 767 | 9079 | 17651 | 5452 |
| 1986 | 1616 | 2325 | | 7427 | 14999 | | 9495 | 18117 | |
| 1987 | 1970 | 2842 | | 8246 | 15249 | | 10940 | 18223 | |
| 1988 | 2183 | 2408 | 4994 | 9543 | 13020 | 2440 | 12652 | 15600 | 7651 |
| 1989 | 2351 | 2422 | 5173 | 10626 | 13661 | 2422 | 13815 | 16340 | 8226 |
| 1990 | 2594 | 3086 | 5188 | 12257 | 16803 | 3320 | 18012 | 20512 | 8744 |

*Source:* DES/DfE Statistics of Education, Further Education.

*Note:* 1988 on excludes those in LEA maintained colleges. 1986 and 1987, UDE information not available in time for publication of statistics.

and Huddersfield). One effect of CNAA validation was to make possible the introduction of the part-time BEd, the first of which started at Sunderland in January 1973 (Fenwick, 1984); Hatfield and Manchester also proposed part-time BEds (Silver, 1990). In 1979, CNAA reported increasing proposals for BEd, Diploma and MEd courses, reflecting rising demand for advanced qualifications within the all-graduate profession (CNAA, 1980). By 1992, 20 of the 34 polytechnics offered BEd courses.

Polytechnic degree courses in education were not restricted to teacher training. The 1972 reorganization of teacher education heralded a period of 'diversification', in which colleges of education found new futures by offering a wider range of subjects, but it also affected the study of education within polytechnics. As the polytechnics absorbed colleges of education and the numbers of trainee teachers were reduced, the polytechnics also diversified their education provision. Education became a subject option in its own right on modular and multidisciplinary courses, for example at Oxford Polytechnic, so it was no longer taught only to those seeking qualified teacher status. This development was facilitated by the two-year DipHE, which although it was never successful as a qualification in its own right, made possible the study of education as a subject, rather than a profession, in the polytechnics (as in other colleges).

The advent of CNAA-validated BEd degrees in polytechnics did not immediately introduce a fundamental revolution. Joint UGC/CNAA guidelines published in 1973, which firmly established the framework within which the BEd should be developed, were vague and conservative. The BEds were, however, meant to achieve flexibility, allowing transfer to and from related DipHE, BA and BSc courses. But while in 1973 Robinson (1973) had predicted that CNAA validation would lead to closer integration of the professional, academic and liberal aspects of the curriculum, breaking traditional structures, the increasing use of modularity which followed the move to CNAA validation focused on integration within courses rather than compatibility between them. The innovation which did take place was within a structure whose main elements, and whose assumptions they embodied, were largely unquestioned (Alexander, 1984). Chambers (1979), reviewing BEd submissions to the CNAA found 'a uniformity in . . . mediocre practice and an isolation in innovatory practice'. However, there were changes. Many institutions developed thematic studies such as 'The Child in Society', and there was a trend towards interdisciplinary and multidisciplinary courses. School experience had moved on considerably from 'teaching practice' and curriculum studies were replaced by professional studies, which moved increasingly to centre stage (Alexander, 1984), in part due to CNAA's requirement that assessment should reflect all aspects of a course. Alexander (1984) perceived the transfer of the colleges from university to CNAA validation as marking the emergence of the concept of 'the course', with an identity over and above that provided by its components. In the university sector, by contrast, the course was an abstract entity, a label to denote a collection of activities.

Polytechnics were active too in in-service education for existing teachers. The acceptance of teaching as a graduate profession led to the development of a number of in-service BEd degrees in polytechnics, to enable non-graduate teachers to become graduates. While some polytechnics did not depart radically from the traditional models, others chose to be more innovative. When the CNAA education committee issued guidelines for in-service BEds in 1976, while seeking to accommodate the wide range of possibilities, it recorded that, 'The interrelating of theory with practice has proved easier to express in aims than in the course construction and assessment' (CNAA, 1976). However, the course created in 1973 at North East London presented a radical departure as it did not contain a main subject, and sought to bring together education theory and the study of professional practice. Assessment was based on a project file, with no formal examinations (Eraut and Seaborne, 1984). The course was generated out of 'a reluctance to accept perennial domination of theory over practice' (Chadwick and Powney, 1981). Teachers were required to investigate and question their own classroom activities through a problem-solving approach.

Insofar as there was innovation in in-service BEd courses, it was in the polytechnics rather than the universities. When Evans (1981) sought to classify the 62 in-service BEd degrees, he found that of the 20 'pre-James' models, 16 were university validated. In the most radical category, 'applied education', ten of the 12 were CNAA validated (Eraut and Seaborne, 1984).

Teacher education in the polytechnics continued to be affected by demographic and other changes. In the late 1970s, it became clear that the birthrate was still dropping, and further cutbacks in teacher numbers would be needed, which affected the polytechnics along with other colleges. The reduction in planned output was making it increasingly difficult for three-year (Ordinary) and four-year (Honours) BEd degrees to survive alongside each other. A CNAA inquiry in 1981 came down heavily in favour of a four-year, honours only, concurrent BEd, confirming a trend already evident in CNAA BEds.

While the number of places available on BEds was dropping, recruitment to the BEd was running at 25 per cent below target, due partly to concern over the future of teaching and to the introduction of two A level entry. The case for consecutive rather than concurrent modes of training was strengthening. By the end of the decade, the BEd was increasingly identified with primary teachers, with secondary teachers mostly entering through degree plus one year PGCE. By 1980, intakes to the PGCE surpassed that for the BEd.

There was also a serious imbalance in the pattern of subjects, with physical education over-recruiting, whilst mathematics, CDT and physical sciences were well below target. Diversification had also reduced the ability of the DES to control recruitment by subject. Following reports by the Advisory Council on the Supply and Education of Teachers (ACSET), the DES rationalized provision. In August 1982, several polytechnics lost their intakes in teacher education (Taylor, 1984). In addition, the DES stopped public sector BEd provision in most arts and humanities subjects (Alexander, 1984). Polytechnics such as Kingston, which first introduced an 11–18 PGCE in 1970, found its subject range reduced to two (science and music) by the late 1980s as a result of this rationalization of postgraduate secondary initial teacher training.

From the late 1970s, too, the debate switched from the structure of teacher training to issues of course content. Following the appointment of Sir Keith Joseph as Secretary of State, and evidence emerging from HMI surveys of schools that new teachers were unable to match learning experiences to pupil ability, the stress was on an appropriate curriculum preparation, emphasizing academic subject study, confirmed in the 1983 White Paper, *Teaching Quality* (DES, 1983) and in the Secretary of State's criteria for the approval of teaching courses (Alexander, 1984).

Government policy had led to a marked shift towards the one-year PGCE as the main form of initial training for secondary teachers. This had highlighted the problems of course design. The traditional university PGCE structure appears to have been the standard approach to PGCEs in the early days. The HMI inquiry on public sector PGCE courses (HMI, 1980) confirmed trends towards greater integration and variability/continuity in school experience. A report by a working party of the Committee for Education into CNAA PGCE courses in 1984 recognized the changes in PGCEs in the public sector (CNAA, 1984a). The emphasis was on school-based courses, with up to 100 days spent in the classroom; courses with flexible processes capable of responding to the developing needs of individual students; diminishing boundaries within course components, so that proposals retaining traditional discipline boundaries had disappeared, and the boundaries between course components, such as Education Studies, School Experience and Professional Studies, were being questioned (CNAA, 1984a).

New opportunities were offered for the polytechnics by the continuing shortage of teachers in mathematics, physics, CDT and business studies. This led to the introduction of two-year courses of initial teacher training aimed at mature holders of appropriate technical qualifications such as BTEC highers. By 1988, 11 polytechnics were offering a variety of specialist two-year BEd or PGCE courses (CNAA, 1989). South Bank Polytechnic introduced a two-year BEd designed to bring mature students from ethnic minority backgrounds, with higher education experience including degrees from overseas which were not recognized, into teaching. HMI (1991c) concluded that 'this course is bringing some very able people with, in some cases, quite exceptional talents into the teaching profession'.

Although in-service training became recognized as increasingly important, with increased take up, it was also bedevilled by a bewildering array of diplomas of various levels, with the issue complicated by the heterogeneous nature of possible intakes. In CNAA guidelines in 1981, the PG Diploma was limited to programmes normally encompassed within higher degrees, with similar entry requirements. A new Diploma in Professional Studies was introduced in 1978, intended to recognize the needs of mature students who were not necessarily graduates for further academic and professional development, and the numbers of courses and students grew rapidly. Polytechnics were well placed to develop a range of responses to in-service needs. At Manchester, HMI (1991d) found some courses designed in conjunction with LEAs, others forming part of the Polytechnic's modular diploma and degree structure.

As with other teacher training institutions, polytechnics were constantly beset by problems of government policy. In-service teacher training in polytechnics was threatened by changes in funding. The introduction of Grant-Related In-Service Training (GRIST), had led to its increasing isolation (Robinson, 1987). The Committee of Directors of Polytechnics (CDP) perceived the right of serving teachers to have access to higher education was being severely weakened (Santinelli, 1987).

The establishment of the Council for the Accreditation of Teacher Education (CATE) in 1984 presented further problems for teacher education in polytechnics, driving its isolation through its particular requirements, rather than promoting integration. Its requirements ran counter to developments in the polytechnics. Barton *et al.* (1992) recount the experience of one polytechnic BEd course's experience of CATE. The rationale and structure corresponded with innovative thinking on reflective practice, and had been discussed in teacher education journals. The course, part of a modular scheme, was fresh from a successful CNAA validation, and ready to argue its case before CATE. The course was failed by CATE as it did not fit the template embodied in Circular 3/84 (DES, 1984). Resubmitted to satisfy the CATE criteria, it obtained the necessary accreditation, but at the cost of a high turnover of staff, as many of those with a commitment to the 'reflective' rationale left to take up appointments elsewhere. At another polytechnic, the head of department commented that professional autonomy was being challenged so much by CATE that it generated 'grave concerns for the amount of power that bodies like [CATE] can have, in really a fairly arbitrary way' (Barton *et al.*, 1992). CATE effectively placed course approval in the hands of the Secretary of State (Barton *et al.*, 1992). In addition to the requirements of CATE, the introduction of the National Curriculum was also causing polytechnics to rethink their approach to the BEd, as at Nottingham (HMI, 1990e).

In September 1989, two new experimental school-based schemes, for Licensed Teachers and Articled Teachers, were brought in to provide alternative routes into the teaching profession, by-passing academic institutions (Gilroy, 1992). The attack on the ability of academic institutions to develop teachers was dramatically brought to a head by the Secretary of State, Kenneth Clarke, when, first in a speech in January 1992, then in a consultative document in January 1992, he proposed, against the advice of his senior civil servants, that the vast majority of teacher education should be located in schools, and away from polytechnics, colleges and universities (Gilroy, 1992). The polytechnics had, however, already been active in school-based teacher education, with an early course for secondary teachers at North

East London Polytechnic pioneering the approach years before it became a policy issue (Chadwick and Powney, 1981). Later, school-based secondary courses developed at Oxford and elsewhere, and the first primary school-based PGCE course, directed at the needs of inner city schools and ethnic minorities, was introduced at East London.

It was courses like this that exemplified the benefits of the incorporation of teacher education into polytechnics. Assisted by the processes of CNAA validation, the assumptions of 'monotechnic' modes of preparation had been challenged, and teacher education could share its subject teaching with the wider work of a polytechnic. This did not often happen, and the experiment never quite achieved the early ambitions of integration of, for example, Robinson (1973). Whilst education became a subject of study in its own right, and a popular one at that, and integrated into 'mainstream' courses, teacher education was still isolated, and made increasingly so by government policy. The teacher education offered by polytechnics was, nevertheless, distinctive, particularly in comparison with the universities. Most inner city teacher education was in the polytechnics, and reflected the polytechnics' practical emphasis and concerns for relating theory and practice, for access and equal opportunities. Primary initial training at the Polytechnic of North London, for example, was found by HMI (1991e) to have high numbers of non-standard students, students from ethnic minorities and mature students. The polytechnics took these concerns with them into the evermore uncertain world of teacher education as they acquired university titles.

## *The DipHE*

The James Report's recommendation of a new award, the Diploma of Higher Education, to recognize the successful completion of a two-year period of study at degree standard, arose in the context of the pressing need to rationalize teacher education, but the James Committee envisaged it also providing a terminal qualification, an appropriate educational basis for further training in professions other than teaching, and access to other university or CNAA degrees (James, 1972). It was envisaged that,

> the course would be broad in scope and would include, for all students, a substantial element of general studies, occupying about a third of the time combined with rigorous study of normally two special subjects, one of which might or might not be related to educational studies, chosen by students from a range of options.
>
> (James, 1972)

As we saw earlier, the 1972 White Paper confirmed the scope of the award beyond teacher education. The creation of the DipHE offered an opportunity to develop higher education courses unfettered by existing concepts of what constituted a degree.

In 1973 a study group was established under the chairmanship of Sir Walter Perry of the Open University with representatives of the universities, polytechnics, colleges and CNAA to establish trans-binary guidelines on the new award; the first proposals reached the CNAA early in 1974. However, many institutions ignored the new award. The first two proposals approved by CNAA were quite different. One from the Berkshire College of Education linked the DipHE to a BEd and later a BA, establishing what became a conventional model; the other, from North East London Polytechnic, was radically different.

At the outset the intention was to create a course which would embody 'left-wing' ideals for polytechnics (Robbins, 1988). The development was initiated by Eric Robinson, then Deputy Director at NELP, and implemented by Tyrrell Burgess. The proposal for a DipHE by Independent Study, presented to the CNAA in January 1974, defined a completely different approach to higher education. The course was designed to meet the needs of new higher education students: 'we have acted on the principle that new and different groups of people will be going on to higher education' (NELP, 1974). It defined the increase in competence as the desired end goal, and therefore rejected a subject- or discipline-based approach, and also rejected a modular, or unit-based approach, arguing instead that students should have a share of responsibility for planning their programmes: 'It will be for the student to formulate and agree his [*sic*] goals with staff and peers, his methods of reaching them and the means of testing his performance'. The Polytechnic's criterion of 'ability to benefit' was to be key to admission to the programme.

CNAA had established a special group to receive DipHE proposals, and CNAA made clear its intention to monitor the NELP course carefully. Following an early visit the course gained approval for a further year, with certain conditions, including the restriction of mature students without standard entry qualification (Robbins, 1988).

As other polytechnics, notably Middlesex and Wolverhampton, developed DipHE courses, they were more likely to adopt a modular approach, while being experimental in their concept of module content, and approach to teaching, learning and assessment. Many of the free-standing DipHE courses challenged the prevailing discipline base of traditional degrees, focusing on the relationship between knowledge, experience and skills needed to be attractive to employers as well as providing access to the third year of other degree courses (Eley, 1981). Most saw the possibilities of using the DipHE to attract non-traditional students to higher education, and the perceived needs of these students influenced the design and teaching and learning strategies adopted (Bremner, 1982; Gladstone and Turner, 1982; Stephenson, 1982). When, in the early 1980s, Evans carried out a study into access to higher education, he found that those polytechnics with free-standing DipHE courses had higher proportions of non-standard entrants (Evans, 1984). While the DipHE was conceived as being a terminal qualification in its own right, very few took advantage of this, most transferring to degrees (Eley, 1981).

## Postgraduate study

The polytechnics were unique amongst binary systems throughout the world in being able to offer qualifications to doctoral level from their inception. In all other countries, this remained a monopoly of the universities. Even before CNAA was formed, NCTA had promoted and recognized research of a technological nature. The award of MCT (Membership of the College of Technologists) was given to students completing programmes of research equivalent to PhDs in standard.

The CNAA instituted postgraduate awards and the research degrees of MPhil and PhD on a basis similar to the universities, despite early university resistance to the development of postgraduate work and higher degrees in the polytechnics (Silver, 1990). The bulk of these CNAA courses and research programmes were in the polytechnics. The CNAA awards of MA and MSc for taught postgraduate courses were similar to those in universities, but the 'emphases are often distinctive and many are part-time courses'; in science and engineering, the emphasis was on innovation in applied areas (Lane, 1975). A report for the (then) Science Reseach Council noted that postgraduate training in polytechnics emphasized vocational and applied aspects (SRC, 1977). CNAA Masters courses were required to be of one calendar year (whereas a university Masters were one academic session). A postgraduate diploma was introduced in 1970. The first CNAA Masters courses were in solid state physics. In some cases the experimental project was undertaken in industry, and students were sponsored by industry, resulting in a sandwich structure. Lane (1975) reported Masters courses growing only slowly, with only 600 students enrolled on 55 MA and MSc courses in 1973–74. Part of the reason lay in funding arrangements; SRC (1977) noted the absence of the university-type dual support system for the polytechnics. New MA courses in business law, management studies, educational studies and other social science areas were approved, and Lane (1975) perceived a growth of interdisciplinary Masters. In 1977, CNAA issued notes of guidance for MEd degrees and in 1978 it established a new award to meet the needs of experienced professionals intended specifically for experienced mature students who were not necessarily graduates (CNAA, 1979a): the Diploma in Professional Studies. Polytechnics soon had courses approved in Teaching and Nursing.

New subjects of study developed at postgraduate level in the polytechnics. In 1979, the CNAA Committee for Arts and Social Sciences reported continuing growth of postgraduate courses, predominantly in History, but also in Linguistics, Drama, Librarianship, Recreation Studies, Policy Studies and Sociology. Once the CNAA instituted the MBA degree in 1981 there was rapid expansion of MBA courses in the polytechnic sector, with Brighton, Hatfield and NELP amongst the first. In reponse to new funding from the Science and Engineering Research Council, Manpower Services Commission and NAB, new Masters courses in Information Technology were established and CNAA relaxed Masters regulations for IT conversion courses (CNAA, 1985). In 1985–86 the City of London Polytechnic gained approval of a PGDip/MSc in Decision Making; Sunderland Polytechnic had a Masters in film and television studies (CNAA, 1987a). In 1986–87 a new Postgraduate Diploma in Research Methodology was validated at Birmingham Polytechnic, and an MA in Performance Arts at Middlesex (CNAA, 1988).

A survey of 11 full-time taught Masters programmes in Art and Design by HMI (1991f) included eight courses in five polytechnics in 1990. It found that most students were engaged in work which was both demanding and of good quality. The best work reflected current professional or industrial practice and students showed considerable enterprise and personal ingenuity. Teaching staff were well qualified, academically and professionally. The main criticism was, as often with the polytechnics, reserved for the accommodation used for studios and workshops and the range and availability of computing equipment.

On CNAA research degrees, students, initially, were individually registered by subject boards on behalf of the Committee for Research Degrees. In 1974, there were over 1,500 registered students, most in polytechnics. Many research proposals had an applied flavour or an industrial orientation (Lane, 1975). Early registrations were in science and technology, but this widened to include the social sciences in the 1970s. In 1972 CNAA institutions were able to seek delegated responsibility for registration of MPhil students and 11 polytechnics were granted approval for their research degree committees to do this (Silver, 1990). By 1981, with the approval of research degrees committees at the Polytechnic of Wales and Plymouth Polytechnic, the total number of approved institutions went up to 19. In 1981 CNAA began to consider allowing institutions with established research committees to register PhD students direct, and to approve changes in supervision arrangements for PhD candidates, and transfer candidates from MPhil to PhD. Newcastle Polytechnic was the first to be given such approval in 1982 (CNAA, 1983), followed by Hatfield, Leicester and Portsmouth. By 1984–85 they were joined by Brighton, Central London, Plymouth, Sheffield, South Bank and Thames (CNAA, 1986a). When CNAA introduced the idea of 'accreditation' (see Chapter 6), eight polytechnics were among the first institutions to be accredited for research degree programmes in 1988 (CNAA, 1989).

The function, indeed, legitimacy of research and research degrees in the polytechnics continued to be a matter of controversy. Research was, after all, one of the key features of the university sector, and polytechnics had been constrained from the start by government policy that they should only undertake research relevant to external needs or to support teaching. By contrast with the universities, they were not funded specifically for research, except for small amounts under NAB and PCFC. Under the 'dual support' system in 1989–90, the UK universities received £860m from the UFC and £260m from the research councils; the polytechnics and colleges in England received £20m from central funding and £10m from research councils (DES, 1991). The polytechnics found considerable support for the development of research in CNAA. The Council published a draft policy statement on research and related activities in 1984 which regretted the lack of support for research in polytechnics from local authorities and saw these as 'essential elements in the academic health of institutions' (CNAA, 1984b).

An inquiry into improving research links between higher education and industry found that polytechnics experienced particular problems because of their status. The over-detailed control by local authorities and the lack of central provision for research support were inhibiting industry–polytechnic interaction. Polytechnics were also inhibited in their work for industry by the lack of any direct funding for research analogous to the UGC support of universities. This was seen as essential if the polytechnics were to have the foundation and flexibility required for industrial work. The local authority responsibility for polytechnics put them and their staff in an ambiguous legal position when undertaking work thought not to relate to their primary (teaching) function, and work of assistance to industry might be considered to be in this category (Advisory Council for Applied Research and Development, 1983).

King and Austin surveyed 25 polytechnics in the 1980s as part of the CNAA Rochester inquiry. They showed that less than half of the responding polytechnics had a policy written down and regularly implemented by the Academic Board. The policy emphasis in around 60 per cent of polytechnics was on research serving the needs of the community, supportive of the teaching function and staff development, and of scholarship and scholarly activity. Collaborative, group and interdisciplinary research was favoured, with collaborative having the highest emphasis. Action research barely featured, although applied research had a high priority; fundamental research had almost the lowest priority (King and Austin, *c.* 1983). In newer subject areas, for example performing arts, research policy was uneven and underdeveloped.

King and Austin (*c.* 1983) also found large differences in institutional resource levels supporting research. In one institution there was no LEA-supported research assistant and in many, the level of support had been drastically reduced. As a proportion of total budget, average levels of support were often minimal, although this was balanced by extremely generous provision in others. Readers were largely in science and technology. Readers were often overworked in terms of teaching commitments, so that they were difficult to distinguish from principal lecturers. King and Austin found many polytechnics could not distinguish between resources used for teaching and those used for research. Polytechnics were mindful of the need to evaluate their research policies, usually through regular review of research objectives in relation to the needs of teaching programmes or assessment of research publications. In a number of polytechnics this led to the decision to concentrate resources for research around groups of people engaged in collaborative ventures, often with industry.

Nor were vast resources generated externally. The total income raised from research from external sources for the 25 polytechnics in 1981–82 was only £14m and this supported some 1,000 projects and 270 studentships. Most projects were in engineering and technology, physical and life sciences, with architecture, building, surveying and planning and land management, management and social sciences making a substantial contribution. Income attracted by mathematics and computer sciences was suprisingly low. The contrast with the universities was stark: in 1989–90, the polytechnics and colleges in England had external research income of £40m; the UK universities had £500m.

Despite these difficulties – and perhaps because of them – research remained a key activity in most polytechnics. At Plymouth, for example, the Director reported that it was taken very seriously and that 'it succeeds in the way intended – not just in the success rates of research students, the topics they study and their relation to industrial purpose, or to the extent of external funding . . . but as a support for the teaching base' (Robbins, 1989). The Polytechnic's research profile was seen as important to sustain its academic reputation, to attract the right sort of staff, to enable course development, to attract students (undergraduate as well as postgraduate) and to provide an extensive consultancy service for the region.

## Courses for new kinds of students

The attempt by polytechnics to increase access to higher education to new kinds of students had implications for course design, as the example of independent study at North East London makes clear. Not all polytechnics or courses attempted so radical a solution as NELP, but the polytechnics did make higher education available to a wide range of students without traditional A level qualifications. From the beginning, CNAA regulations recognized National Certificates and Diplomas (traditional further education qualifications, later BTEC awards) as entry requirements for degree courses, and institutions were able to accept students, exceptionally, without formal qualifications, particularly mature students. Subsequent revisions to these regulations relaxed the rules even further.

Many of these students were simply accepted straight on to polytechnic courses, but to facilitate entry of new kinds of students, different kinds of preparatory courses were offered. 'Access' courses offered students, usually in further education colleges, an entry qualification to higher education. In 1978, CNAA began a review of policy towards their growing numbers. In 1979 it issued a statement emphasizing its policy of promoting 'Extension of Access to Higher Education' because it felt that institutions did not always appreciate the scope and flexibility that Council's regulations offered in relation to entry requirements: 'It is Council's intention that greater numbers of potential students can and should be encouraged to take advantage of courses leading to its awards, and it is hoped that the statement will help in this regard' (CNAA, 1981). Further similar statements were issued in subsequent years (CNAA, 1982; 1984d). In 1983 CNAA

Regulations made provision for 18-year-olds to join part-time courses as a normal route.

Polytechnics, such as Hatfield, themselves offered preparatory courses for students without entry qualifications. Its 'Polyprep' course, in 1976 ran for two days a week for eight weeks, and included study methods, numeracy, English and a subject choice. In 1979 Hatfield added a follow-up course of a further eight weeks leading to a Polytechnic Certificate in Preparatory Studies (Michaels, 1979).

The Higher Introductory Technology and Engineering Conversion Course (HITECC) initiative to enable students who did not possess the relevant A levels to enter engineering was introduced by NAB, with over 20 polytechnics running courses in 1987–88 making a dramatic impact on recruitment to engineering (Watkins and Rogers, 1992). After only one year, the HITECC course at Portsmouth was integrated as a common foundation year into existing BEng courses. In 1992, nearly 25 per cent of all home students on Portsmouth's engineering courses had commenced on HITECC or its successor (Otter and May, 1992). Polytechnics also developed Access courses specific to engineering, some aimed at women, as at Lancashire (MacKeith and Burrow, 1992). Sheffield City Polytechnic sought to encourage women into engineering by involving teenage girls in initiatives such as short courses, a Young Engineers Club and Women into Science and Engineering (WISE) taster courses (Jennings *et al.*, 1992).

Woodrow (1986) described Access courses as 'designed jointly by higher education and further education institutions to enable adults to bridge the gap between their particular experiences and skills and the requirements of the degree course'. She noted that they had developed a distinctive approach, 'becoming increasingly associated with the view that courses should be student-based rather than syllabus or institution based'. The first Access courses started in the mid-1970s, in response to an invitation from the DES to seven local authorities to establish courses for people with special needs which could not be met by existing educational arrangements, and who possessed valuable experience, but lacked the qualifications required. ILEA responded most positively of all the invited authorities, with three-quarters of the courses which resulted from this initiative under its ambit.

While this impetus to Access courses came from the DES, in the early 1980s the message from government was more cautious. Her Majesty's Inspectorate ruled that BEd courses should not have more than 25 per cent 'non-standard' entrants, who included Access students (CNAA, 1986a). But evidence showed that students entering BEd courses from Access courses could not be distinguished in quality from the broader range of students with whom they were working as they completed their studies (CNAA, 1988). The 1985 Green Paper welcomed Access courses with the important proviso that 'academic rigour and standards are maintained' (DES, 1985a). The Lindop Committee counselled caution in providing access, because of the closeness of the relationship between the FE provider and the receiving institution, which could lead to students who lacked the ability to succeed being admitted to degree courses (Lindop, 1985). It called for institutions to develop procedures to assess applicants without formal entry requirements, and it expressed concern about admitting too high a proportion of Access students on to courses not designed for them.

Meanwhile the number of Access courses mushroomed: in 1984, 90 colleges provided them (CNAA, 1984d), of which at least half were linked to polytechnic degrees. Wright (1991) estimated that there were at least 600 courses and all the polytechnics had at least one Access link. In 1987, the DES White Paper finally fully sanctioned Access courses, as concerns about falling numbers of students with conventional A levels and the needs for highly qualified manpower required students to be found from other sources. Access courses were referred to as providing a 'third' route into higher education, with provisos to ensure that the Access movement did not threaten quality (DES, 1987a).

There were other issues, too. The advent of Access courses was, paradoxically, seen as lessening direct access to higher education, as mature non-standard students who would previously have been given direct entry were counselled to the Access route (Tight, 1988a; Wright, 1991). Certainly one polytechnic found that numbers of mature non-standard students were dropping following the advent of Access courses (Waterhouse, 1987) and at Manchester Polytechnic the Youth and Community Certificate which had previously accepted black candidates without normal entry qualifications was now referring them to Access courses (Heron, 1986). Access courses were seen as designed to meet the requirements of the receiving institutions, and so by transforming potential students, they accommodated the demands and assumptions of the present system (Tight, 1988a; Wright, 1991).

The accredidation of experiential learning (APEL) also appeared in polytechnics in the early 1980s, as a way of enhancing access by assisting students to make explicit their past experience and the learning they had gained from it in such a way that admitting tutors could give credit. The first course, 'Making experience count' was pioneered by Thames Polytechnic in association with Goldsmiths' College in 1982 (Evans, 1987). A CNAA project was established involving eight polytechnics and several colleges which successfully helped students in such areas as production and mechanical engineering, business, social studies, computing and information technology (Evans, 1988). However, by the end of the 1980s, only a third of PCFC institutions had APEL schemes in place (Allan, 1992). When the PCFC asked institutions to describe what they were doing to widen participation, they found that 82 per cent had Access courses, 67 per cent belonged to an Access consortium or Federation, 82 per cent were involved in CATS, the credit accumulation scheme, and 30 per cent claimed to use APEL.

Gaining entry to the system was only one of the problems. Once there, the system was in many ways very rigid and inflexible: even moving course within the same polytechnic was fraught with difficulty and transferring with credit between institutions was nigh impossible (Brosan, 1971). The establishment of the DipHE further exposed the inflexibility of the system, as diplomates sought access to the third year of degree courses to continue their studies. Yet follow-up of the progress of Middlesex Polytechnic diplomates from the first three cohorts who had transferred directly to the third year of honours degree programmes showed that there was little overall difference between the performance of these students and those who had taken a conventional route (Gladstone and Turner, 1982).

To provide for the new kinds of entrants, many polytechnics offered distinctive degree courses or pedagogies. We have already noted some of the features of independent study. Another example was a course at Hatfield Polytechnic for mature women wishing to return to active working life (Michaels, 1973; Michaels and Booth, 1979). The course stucture was flexible so that students were able to vary the pace of study and the scheme claimed adaptability to needs in term of qualification, choice of content, and time span. Attendance was only on three days each week. There was a strong support system, with students having both a personal tutor and an adviser of studies. The course had three 'exit' points with qualification: Certificate, DipHE or degree with honours. Entry was limited to students aged 23 and over and was particularly attractive to married women; out of 137 students only eight were men (Michaels, 1979).

Other courses were similar and legion. In 1976 the Polytechnic of Central London offered a two-year part-time programme in Labour Studies designed to enable trade unionists to gain wider perspectives. There were no formal academic entrance requirements and the course met with excess demand. Interestingly, there was resistance within the Polytechnic to aspects of the course, particularly its assessment policy which sought to avoid conventional examinations (Warner and Shackleton, 1979).

Associate student schemes were introduced allowing students to take parts of courses alongside full students. Hatfield Polytechnic introduced its associate student policy in 1976, allowing study on particular modules. Students were required to submit assignments, and could opt for examination and gain credit (Michaels, 1979). In 1983, CNAA reminded institutions of its support for programmes developed by institutions to allow students not registered with CNAA to participate in CNAA validated courses, and that it would be willing to grant exemption for such students who had been successful and wished to proceed on to a degree programme.

## Teaching, learning and assessment strategies

The polytechnics brought with them pedagogic approaches based in the technical college tradition, but gradually their emphasis on teaching (rather than research), encouraged by CNAA's principles and practices, led to the development of more student-centred approaches. A comparative timetable analysis between Lanchester Polytechnic and Loughborough University revealed considerable differences in the tutorial support provided, although the institutions were similar in size and course range (Birch and Calvert, 1976). Student tuition load at the Polytechnic overall (averaging just over 1,900 hours per annum) was 20 per cent higher than at the University (just over 1,600 hours); in engineering the difference was nearly 40 per cent (over 2,300 hours compared with just under 1,700 hours). Class sizes also differed: students at Lanchester were taught in much smaller groups (average 18) than at Loughborough (43).

New forms of delivery were introduced. In 1981 CNAA considered ways of encouraging institutions to sustain academic standards within diminishing resources, and to develop resource-based learning (CNAA, 1982). Computer program design methods were introduced to teach programming in computer science and data-processing courses at Sunderland Polytechnic (Smith and Thompson, 1988); self-paced programmed learning was used to cover certain topics at Sheffield Polytechnic Metallurgy Department (Hinchliffe, 1982). Business games were computerized in the Department of Business Management at Leeds (Wilson, 1986; Burgess, 1989). CNAA approved a distance learning scheme in Business in 1984–85 (CNAA, 1986a).

Newcastle Polytechnic developed a distance learning curriculum package designed to teach the skills of presenting, analysing and evaluating statistical information to middle management librarians and information officers who have difficulty in getting time to attend short courses or a degree on a part-time basis (Blackie, 1984). Peer tutoring was used at Nottingham Polytechnic (Saunders, 1992) and Kingston Polytechnic used second-year students to assist first-years (Makins, 1991). The communications module on the humanities modular degree at Bristol involved practical audiovisual media work on 'live' projects for clients in the community – for teachers, social workers or charities (Thorn, 1981). Action learning was introduced on MScs in Management at Manchester Polytechnic (Thorpe, 1988) and North East London Polytechnic.

Even in engineering, where polytechnics were particularly criticized for educational conservatism, they began to develop a wider range of course delivery and assessment methods. Examples included student-led, project-based and group learning at the Polytechnic of the South West (Johnston and Williams, 1992), project-based methods at Central London (Patterson, 1992), design projects in multidisciplinary groups at Hatfield (Matthew *et al.*, 1992), the use of posters, videos and self-learning packages and technical presentations as assignments at Coventry (Halstead and Conlon, 1992). Simulations of engineering companies developed business and interpersonal skills as part of the new integrated degrees at Sheffield City Polytechnic (Robinson *et al.*, 1992). A final-year integrated group engineering project was used across several degree courses within the School of Engineering at Portsmouth (Horsley and Lord, 1992). Business awareness was introduced through a variety of different approaches, for example by using competitive business games at Leicester Polytechnic (Chapman *et al.*, 1992). Advances in technology led to greater use of computer packages allowing remote, student-centred learning, such as the computer-aided control system design (CACSD) at Manchester Polytechnic (Golten and Verwer, 1992). The demand for engineers with better social and communication skills led to the introduction of the experimentation course to develop problem-solving and group-working skills at Humberside Polytechnic (Collins and O'Donnell, 1992).

Polytechnics attempted to increase flexibility in modes of study. In the 1980s, for example, the Combined Study course at Manchester Polytechnic introduced the concept of mixed mode, allowing students the possibility of switching between part-time and full-time. Hubert (1989) concluded that it had been successful in helping students redeem past underachievement and in matching domestic requirements to study aspirations. There were increasing numbers of flexible programmes of part-time and mixed-mode study (CNAA, 1986a). Part-time variants of full-time courses were often designed to meet the needs of older students wishing to combine higher education with family or work commitments, as in the Polytechnic of Central London's part-time variant of its law degree.

One of the most distinctive forms of education that the polytechnics had inherited from the constituent colleges and the technical college tradition was the sandwich course. As we saw earlier, the sandwich course came into prominence with the colleges of advanced technology, which took it with them into the university sector in 1966. Sandwich courses involved students in periods of industrial placements, either of six months alternating with college periods over a four-year course (a 'thin' sandwich), or for one full year (a 'thick' sandwich).

Many of the polytechnics had sandwich courses from the start; in 1973 about half the students and courses in the CNAA sector were sandwich (Lane, 1975). In the polytechnics, as we saw in Chapter 3, numbers steadily increased, despite the difficulties. Originally the courses were developed in technological subjects, but they were extended into the sciences and by 1964, the Crick Report proposed establishing sandwich degrees in business studies. These developed rapidly in the polytechnics. Daniel and Pugh (1975) found that the CNAA first degree in business studies represented something quite new and distinctive in British higher education. Compared with university graduates, remarkably high proportions of CNAA business graduates went directly into employment. This was especially the case among women graduates: generally the proportion of graduates going straight into employment was just over a third; of CNAA women business graduates 82 per cent went straight into employment. CNAA business studies graduates were also less likely to be unemployed (Daniel and Pugh, 1975). The business sandwich degree had had a major influence on career patterns: a year after completion, graduates were working in managerial functions and specialisms across the full range of economic sectors; the 1968 business sandwich graduates were also earning on average considerably more (17 per cent) than their full-time university counterparts. The graduates found that employers expressed a preference for university, rather than polytechnic graduates, but that the sandwich element helped the students overcome the disadvantage of the polytechnic degree. Daniel and Pugh (1975) concluded that, in the social sciences, polytechnics were 'well advised to pioneer new courses using different methods, such as the sandwich course in business studies, rather than imitating the universities by providing courses in traditional subjects on a full time basis'. They also noted that if 'student wastage rates and employers' prejudices against non-technological polytechnic graduates are to be reduced, the resources for degree courses within polytechnics and universities need to be made more equal' (Daniel and Pugh, 1975).

These conclusions pointed to some of the difficulties faced by the polytechnics with sandwich courses. Problems of finding suitable industrial placements started to surface in the early 1970s during economic difficulties (Law, 1971; Lane, 1975). A survey of industrial placements by the CNAA in 1972 found that polytechnics and colleges were facing significant problems in offering sandwich courses, but still retained a strong support for them and were relatively optimistic about their future. The areas experiencing major problems were electrical and mechanical engineering and business studies. Trouble in securing appropriate training places was foreseen, with some students already undertaking significantly modified training programmes (CNAA, 1973b). In 1981 CNAA was still concerned with the 'growing problem of finding placements for sandwich course students' (CNAA, 1982).

In 1983 the problem of finding appropriate placements was acute, and more so for the polytechnics than the universities. In a survey which included all 30 polytechnics and the ten universities most involved in sandwich provision, 84 per cent of placement officers reported difficulties in placing students. While the universities reported a shortfall of 4 per cent in places, the polytechnics had a shortfall of 12 per cent for degree, and 21 per cent for non-degree students. The competition to find placements was diverting time and resources from other areas of work. The tendency to accept less than the best training places was reducing the appropriateness of the experience. Students were increasingly carrying the onus to find a placement themselves (DES, 1982). Engineering and technology were hardest hit in the struggle for sandwich places, reflecting the differential impact of the recession, with manufacturing industry being hardest hit. In engineering and technology, 30 per cent of polytechnic Higher Diploma and National Diploma students were unplaced. These problems raised questions of the value and effectiveness of the sandwich principle, and William Waldegrave, then Parliamentary Under Secretary of State with responsibilities for higher education, said in a written answer to a parliamentary question on 12 July 1982, that 'a comprehensive assessment of sandwich provision was needed' and a committee was established to investigate sandwich education (DES, 1985b).

One factor underlying the concern was the cost of sandwich education. An estimated 4 per cent (over £25m) of the AFE pool funds in 1985–86 were estimated to be the additional costs associated with the sandwich year of 58,000-odd students on such courses in England (DES, 1985b).

There were, however, benefits. Boys (1984) found that students taking sandwich courses appeared well satisfied with their courses, agreeing that it had given them a valuable experience of working life and had enhanced their employment prospects. A minority had found the placement a waste of time, and 40 per cent would have liked more supervision from their tutors. A study at Manchester Polytechnic of graduates from universities and polytechnics (mean year of graduation, 1979) found that sandwich students were more likely than full-time students to be satisfied with their course of study. Nearly 75 per cent of sandwich graduates as opposed to under 50 per cent of full-time graduates believed their course to be relevant to their first career post (cited in DES, 1985b). The Leicester Polytechnic Goals of Engineering Education Project, surveying graduate engineers found 96 per cent preferred sandwich to full-time, even though over 50 per cent had been full-time themselves.

CNAA found staff were committed to sandwich courses and saw benefits to students in giving practical application of knowledge, its contribution to personal development, and for some development of specific technical skills over and above those expected on full-time courses. Placement also helped employment prospects.

DES (1985b) concluded that sandwich students had a small advantage in gaining initial employment, though, echoing findings by Roizen and Jepson (1985) cited in Chapter 3, 'the majority of employers attach greater significance to differences between potential employees in terms of the source, class and subject of their degree'. There was no clear picture as to whether sandwich graduates enjoyed any advantage in terms of pay compared to their full-time counterparts (DES, 1985b).

The DES committee concluded that employers gained worthwhile benefits from hosting sandwich students, and that their additional costs in salary and overheads were counterbalanced by the savings made and subsidies received and by the value added by the student on placement. Significant minorities of employers, particularly in manufacturing, perceived benefits from the permanent recruitment of sandwich-trained rather than full-time graduate employees in terms of range of relevant skills, but the majority of employers overall had no preference about mode. Place and subject were more important than mode in determining pay and future career opportunities. The work entailed in sandwich course provision encouraged mutually beneficial links between HE and industry. The committee found that the evidence supported the case for sandwich courses in principle, and its maintenance at present levels (DES, 1985b).

Subsequent research confirmed these broad findings in the later years of the polytechnics. A project by Sunderland and Napier, investigating the costs and benefits for employers in employing students on placements, found 98 per cent considered placement students to be of benefit, and most had recruited sandwich students for a number of consecutive years. One of the main benefits was the amount of productive work done by the student. It appears that a student salary was some 20 per cent less than that paid to permanent staff doing similar work. Many found a benefit in having additional labour to carry out projects not considered of top priority. The ability of students to bring new ideas and enthusiasm was also recognized, as well as the benefit of being able to assess students' potential as full-time employees. There was a general subjective view that they were getting 'value for money' (CNAA, 1991a).

Other forms of polytechnic-industry links also developed. The Council for Industry and Higher Education (1990) found that polytechnics (and the post-war, but not the older universities) were active in developing collaborative courses with industry, in which the partners usually shared course planning, teaching and projects. Courses ranged in level from certificate and diploma to postgraduate, and nearly half were in engineering, though others included BA programmes at Manchester Polytechnic with a group of retailers, at Birmingham Polytechnic with the West Midlands Police and at Thames with a building society. Partnership initiatives promoted involvement of industry in education, often supported by Enterprise Initiative funding, as in the setting up of the Partnership Centre at Hatfield Polytechnic (Breckell *et al.*, 1992). Greater involvement of industry in undergraduate education was evident at Humberside, where groups of final-year students were asked to tackle design problems encountered by industrial companies, who provided financial support for building and testing (Allison and Collins, 1992). In 1991, when the first Partnership awards were announced by the Partnership Trust, polytechnics took two-thirds of the prizes; many of them were in the engineering field, including the BEng course at Bristol for the progressive use of projects in engineering education, and the Centre for Women in Technology Design and Manufacture at Lancashire for women into engineering. Coventry was the award winner for assessment in engineering education, and Middlesex for information technology skills (Brookman, 1991b).

Polytechnic degrees at first continued with the traditional examination assessment patterns. So for Coventry Polytechnic, the economics degree in 1966 was entirely assessed through closed-book examinations (Mallier *et al.*, 1990). Legge (1981) recorded that psychology degrees before 1968 involved traditional unseen examinations with a practical.

CNAA was keenly interested in examination methods and possible new ways of examining, and set up a Working Party in 1970 which discussed matters such as continuous assessment, open-book examinations and the problems of examining projects (CNAA, 1970). In a survey of the mechanisms for assessment on economics degrees, Mallier *et al.* (1990) found that most had introduced extensive elements of coursework into assessment in the belief that there are student skills which cannot be adequately assessed by a three-hour examination. Many had introduced a dissertation into the final year. At Birmingham, exceptionally, the entire course was assessed by course work only.

In comparing the polytechnics with universities, Mallier *et al.* (1990) found that the polytechnics achieved consistently better results, despite the universities' perceived advantages in attracting students with better A level grades, having shorter terms, more advantageous staff : student ratios, greater resources and placing more emphasis on traditional exams. The polytechnic sector had greater breadth in terms of numbers of courses and assessments. Similar conclusions were reached by Legge in relation to psychology in polytechnics (Legge, 1981). On a business studies degree course at Middlesex in 1981, where examinations with a 'seen' component were introduced, the new method was preferred to continuous assessment, and performance improved (Chansarkar, 1985).

Student self-assessment was also introduced, for example on an introductory course in computer studies at the Polytechnic of Wales. Students had to justify their self-assessment for their marks to be recorded (Edwards, 1989). A similar scheme was employed on the public administration degree, despite difficulties in getting official approval for self-assessment. Students thought the scheme was fair and worked well. If anything, students underestimated their own achievements. Over half saw it as helping their personal development (Edwards and Sutton, 1992). The Department of Mechanical Engineering at Polytechnic South West introduced peer marking of set problems (Fry, 1990).

The Postgraduate Diploma in Management by Self-Managed Learning at North East London Polytechnic was a student-centred course, with participants setting objectives and determining the programme and the nature of assessment, and actively involved with peers in final assessment, with the lecturer as part of the learning group (Eley, 1993).

However, examinations still retained their grip, whatever the demonstrable quality of project work; claims of their objectivity were taken more seriously than criticism against them (Streddar, 1983).

The establishment of independent study on the DipHE at North East London Polytechnic, with students determining their own objectives, programmes of study and assessment mode, meant that staff had to reappraise the function of assessment as a ranking. Here, assessment was driven by the requirement for the participant to demonstrate achievement of individual objectives, which varied considerably between students, at a standard comparable to the second year of a degree. In establishing this comparability, specialist tutors and external examiners with experience of more traditional degrees helped in the establishment of benchmarks. Some programmes were in areas with no direct parallels in degree courses elsewhere: here the debate focused on the process, skills and knowledge demonstrated. This DipHE also used a particular, and highly individual form of group project as a major component of the final assessment, with students required to demonstrate general competence in group working and problem solving, and to contribute to their own assessment by evaluating their own performance (Eley, 1983).

The freedom provided by the new DipHE qualification gave scope for non-traditional design and for innovative assessment elsewhere. At Wolverhampton Polytechnic the basic principle for assessment was that 'each module will be assessed in a manner appropriate to its objective and content. As a matter of policy the use of a variety of methods of assessment will be encouraged'. This resulted in experimentation: extended essays, individual and group projects, fieldwork reports and evaluative diaries appeared alongside the more familiar coursework essays. 'Take-away' and 'seen' examination papers were introduced. Independent study modules were available at Middlesex, Oxford and Wolverhampton Polytechnics (Watson, 1985). At Manchester, an Independent Study module in History was influenced by participation in the Enterprise in Higher Education scheme. It allowed students to apply historical knowledge and training and to extend their skills by providing project work of an historical kind for external clients. Contracts specifying the scope of the project and the nature of assessment were negotiated between the client, student and tutor (Nicholls, 1992).

## Conclusion

When the polytechnics acquired university titles in 1992, they were quite different institutions from the colleges they had been formed from a quarter of a century earlier. The range, content and ethos of their courses had changed in a number of different ways, as this chapter has illustrated. Not all changed in the same way or to the same extent, but it was clear that they could be considered, uncontroversially, as universities in 1992, by contrast with the resentment at their power even to award degrees in the 1960s.

The extent of the change can be seen by looking briefly at one polytechnic as an example. In 1970 Hatfield Polytechnic was a relatively well developed college, concentrating on engineering and science. It stressed its close connections with industry, commerce and research institutions, and emphasized that its courses were specifically designed as a preparation for a career, and most incorporated an industrial training period (Hatfield Polytechnic, *c.* 1970). There were 11 degree courses all of which were already validated by the CNAA, and one MSc course in Control Engineering. In addition there were five HND courses, mostly linked to Polytechnic Diplomas, a DMS and courses linked to the Association of Certified and Corporate Accountants and the Institute of Cost and Works Accountants.

In 1992 Hatfield offered over 55 first-degree courses, 19 taught Masters, as well as research higher degrees, several postgraduate diplomas, eight HNDs, and a small number of other courses, such as Accountancy Foundation, a Forensic Odontology Polytechnic Diploma, Counselling courses and a Diploma for Teachers of Hearing Impaired Children. The prospectus not only shows how the course provision has grown, but also the extended map of knowledge: the early degrees had been in more traditional areas such as Aeronautical Engineering, Applied Biology, Civil Engineering, Computer Science and Business Studies. The 1992 offerings include Travel and Tourism, Electronic Music, Medical Electronics, Nursing, Environmental Chemistry and Contemporary Studies, the latter specifically designed for mature students, offering flexibility in pace of study. Over half of first-degree students were on sandwich schemes; and the Polytechnic was actively marketing CATS. Combined Studies provided multidisciplinary and interdisciplinary schemes including subjects from a number of Schools of Study, enabling students to flexibly combine subjects.

The Polytechnic, whilst still citing its industrial and commercial links, could add its extensive involvement with Europe, which involved the possibility of exchange programmes with the European Community. The organizational structure had developed: there were now six schools, instead of 11 departments.

Another obvious change was the increasing collaboration with neighbouring colleges, not apparent in 1970. The BEng extended degree scheme, run in conjunction with Watford College, provided an Access year of study for potential students without the specific prerequisites for direct entry of any of the engineering degree or HND schemes. The Surveying (Engineering) HND was run in collaboration with de Havilland College, with students spending the final year at de Havilland. The Printing and Packaging BSc was actually run at Watford College. The BSc Horticulture, run in conjunction with Writtle Agricultural College, had students spending two years at Writtle, one at Hatfield, and one on industrial placement.

The challenge when the polytechnics were established was to attempt to develop a form of higher education appropriate for a mass system at the end of the twentieth century. The existing pattern, however fine it was, was no longer a potential model, developed as it was from different historical circumstances, for a (generally wealthy) elite and as much concerned with the research interests of staff as with the education of students.

There was no single solution to this. Diverse courses developed to meet diverse needs. The polytechnics made many claims for innovation, often with justice, sometimes exaggerated. Some 96 innovations were listed by ten polytechnics in London and the South East in 1990, which ranged from a skills course running across all four years of a business studies degree, to a modest table for standard equations in chemistry (SCED, 1990). Nevertheless, the polytechnics could claim to have redrawn the 'map of learning'. They were distinctive in subjects of study, with large proportions of students in business studies, and with the development of vocationally-oriented science and engineering degrees. They established a wide range of subjects as areas appropriate for study in higher education, introduced new patterns of courses, and made a substantial contribution to developing student-centred learning.

At the same time, the polytechnics maintained a tradition of responsiveness to the needs of industry, business and employers. Again, the claims at times may have been exaggerated, and as the government increased the pressure on the whole of higher education to serve these goals of 'social utility' (Becher and Kogan, 1992), the polytechnics were in danger of succumbing to mere instrumentalism (Pratt, 1989b). In the 1980s, through agencies such as the Manpower Services Commission (and its successor bodies), the government influenced the higher education curriculum. The MSC was significant, amongst other things, because it was sponsored by the Department of Employment, and although its activities in higher education were limited, it embodied a philosophy new to post-school education. Seale (1987) saw it as attempting to break with the liberalism of the education ministry. It found this in what he calls 'the new vocationalism', based on the idea of clusters of transferable skills which cut across industries. The MSC was influential in higher education through its adult training programmes, including the TOPS programmes, designed in the 1970s for trainees who were 19 years or older and who had not received full-time education for three years. MSC influenced courses at HND level and above, through support for developments in technology courses, and through its Enterprise in Higher Education (EHE) initiative. With a budget of over £2m for experimental programmes, it prioritized the areas it supported on the basis of estimates of skill shortages identified by its own Skills Unit or other sources. Examples of MSC involvement included experiential learning on sandwich courses aimed at improving the industrial component. The EHE initiative, launched in December 1987, funded higher education institutions to develop activities that promoted 'enterprise' into their work. MSC contributed up to £200,000 per year for five years, subject to employers contributing a substantial share of the costs. Nine polytechnics were amongst the first 20 institutions to be invited to submit detailed proposals for the first round of EHE funding in 1988.

The polytechnics did not resolve all the problems of mass higher education. Indeed their most widespread innovation, the modular course, is the most vulnerable to Robinson's (1968) accusations about the tyranny of academic subjects. The most distinctive innovation, independent study at the Polytechnic of East London, virtually disappeared when it was criticized by HMI, and the Polytechnic closed down the school for independent study in 1991, falling 'victim to the battle in higher education between the collegiate and hierarchical models of management' (Ainley, 1994). The polytechnics faced growing problems of maintaining quality in an expanding system with diminishing resources. HMI (1989b) concluded that the quality of provision in many subjects in polytechnics was better than in other public sector institutions. Most of the teaching was satisfactory and some excellent, though between 10 and 20 per cent was less than satisfactory in some respects. The better provision was characterized by thorough planning and effective preparation by course teams, good teaching through a variety of methods, and a variety of assessment methods. HMI (1989b) drew attention to the need for adequate resources in the polytechnics and the absence of capital investment which had resulted in their using old and inadequate buildings. Earlier, the impact of cuts in recurrent spending on libraries had been noted; according to the National Book League (1982), spending on books in polytechnics fell by 20 per cent in real terms between 1977–78 and 1980–81, with the poorest spender (Huddersfield) at only £16.63 per FTE student and the best (Hatfield) at £132.14. In 1990, CNAA warned that accreditation of polytechnics could be at risk because of poor library provision (*THES*, 1990a); there had been a 6 per cent drop in the number of books per FTE student between 1983 and 1987 and a fall in additions of 26 per cent. Only nine polytechnics met the DES standard of one library seat for every seven FTE students.

The polytechnics had a substantial affect on the university sector, leading to the notion of 'blurring the boundaries' (Pratt, 1988) between the sectors. The demarcation between traditionally vocational and academic courses which previously broadly delineated the polytechnic and university sectors became increasingly fragmented. Skills updating became an acceptable arena for both polytechnics and universities. Involvement with the MSC extended across the binary line. At a time of financial constraint, external funding such as MSC sponsorship became a prize neither wished to lose. Sectoral divisions were further blurred by credit transfer arrangements and ECCTIS. Trans-binary review groups were initiated by NAB and UGC to provide some coordination between the sectors. Polytechnics began to follow the university example of science parks. South Bank Polytechnic, for example, established a 'Technopark' with an explicit commitment to inner city redevelopment. Institutions in both sectors increased links with industry through such schemes as PICKUP. The universities increasingly developed the modular courses that once characterized the polytechnic sector.

At their best, the polytechnics addressed *ab initio* the question set for them by Robinson (1968): 'What is a degree and what is it for?' Their experience suggests that there is no single course design or pedagogy appropriate for all kinds of students or professions, and that many assumptions about the nature of higher education could be successfully challenged, for example about entry qualifications; students without formal qualifications often do as well or better than those with them.

The most innovative courses were those where polytechnics designed them from first principles, and innovation was encouraged when existing assumptions were questioned. Often there was no experience from the past to draw on. In the most innovative cases, the polytechnics decided what they thought they should do and just did it. They acted with what Brosan (1973) described as 'the necessary arrogance'.

# 5

# Staff

Whilst it specified, albeit feebly, the aim of the polytechnic policy in terms of kinds and numbers of students, the 1966 White Paper was even less definitive about the staff it anticipated would teach them. They were barely mentioned. However, it foresaw the proposed polytechnics as a 'mixed community of full-time and part-time teachers and students. They will on the whole have closer and more direct links with industry, business and the professions' (DES, 1966). The issue of staffing was of some importance, for how were these new institutions to establish the new kinds of courses for the different kinds of students that the policy sought to serve? The Committee of Directors of Polytechnics, reviewing the requirements of polytechnics in 1974, was clearer than the White Paper about the requirements for staffing. It stated:

> what is needed is the development of characteristic staff for polytechnics, not imitative of university staffs, but characteristic of Polytechnics in their own right. They would be men and women equipped more appropriately by outlook and experience for the Polytechnic pattern of scholarship and education, committed to the invigorating ideals of the Polytechnics, proud of their role, and confident that their prospects and conditions matched their responsibilities. There is a particularly strong need in senior staff for qualities of educational inspiration and leadership, allied to experience in the wider reaches of society.
>
> (CDP, 1974a)

Robinson, writing in 1968, also argued for staff in the polytechnics able to meet the needs of the new kind of education to be offered. He made explicit what was implicit in the CDP statement and was critical of the existing senior staff of the emerging polytechnics: 'The polytechnics will undoubtedly be hindered in their development by traditionalists in senior positions' (Robinson, 1968). However, he was more charitable of the rank and file, noting that '. . . by accident rather than design, the salary structure has permitted the employment of young teachers of very high calibre'.

This chapter examines how far the polytechnics were able to meet the challenge of the policy. It looks at the staff when the polytechnics started, how their profile changed over the years, their changing functions and attitudes, and the changes in their conditions of service.

## The early years: expansion

Because they were created from a variety of existing technical colleges, colleges of technology, art and other disciplines, the polytechnics already had substantial staffs in post at the time of their designation. In 1971, the first year in which the Department of Education and Science statistics cover all 30 of the new polytechnics, there were a total of 9,825 full-time teaching staff in post (Table 5.1). The statistics show a period of steady growth for the next ten years (Figure 5.1). As student numbers expanded, so did staff numbers. By 1975, there were 13,111 full-time staff, a rise of 25 per cent. Throughout the 1970s, the numbers continued to rise, reaching nearly 17,000 by 1980. This was an increase over the original staff of more than 70 per cent, and a faster rate of growth of staff numbers than in the universities over the same period, where numbers increased by just over 50 per cent (Table 5.2 and Figure 5.2).

However, these figures do not cover the years in which the colleges were being formed into polytechnics, and so do not fully reflect the experience of staff in these colleges. Unfortunately, DES data are not published for these years, and Pratt and Burgess (1974) neglected to record staff numbers in the years 1965–66 to 1968–69, for which it recorded student data.

There were considerable, and sometimes unpleasant, changes in staff as the polytechnics were established. Individual institutional histories show that there was growth of staff numbers in these years, too, but also transfers of staff to other colleges in anticipation of polytechnic designation. As Chapter 3 showed, the constituent colleges quickly shed students and courses deemed inappropriate for an aspiring polytechnic. With them often went staff similarly judged. At Constantine College, for example, the staffing establishment increased from 143 in 1965–66 to 219 by 1970–71, but the figures exclude an unspecified number of staff 'transferred to the Kirby College of Further Education and/or Longlands College, as A level GCE and other courses were moved out' (Leonard, 1970). At Wolverhampton, Smith (1983) reported that most lower level work was transferred to colleges of further education before the Polytechnic came into being. The Catering department moved out in 1973–74, and in 1976 the governing council accepted a two-year phasing out of Printing.

In general, the polytechnic policy offered opportunities for academic staff, at any rate initially. The expansion of the early years, with rapidly rising student numbers, saw not only growth of staff numbers but also an increase in senior posts as advanced work was developed (Figure 5.1). The grade structure (determined in the Burnham Committees governing national salary negotiations) at that time was as follows:

*Figure 5.1* Grade of academic staff in polytechnics, 1971–72 to 1990–91

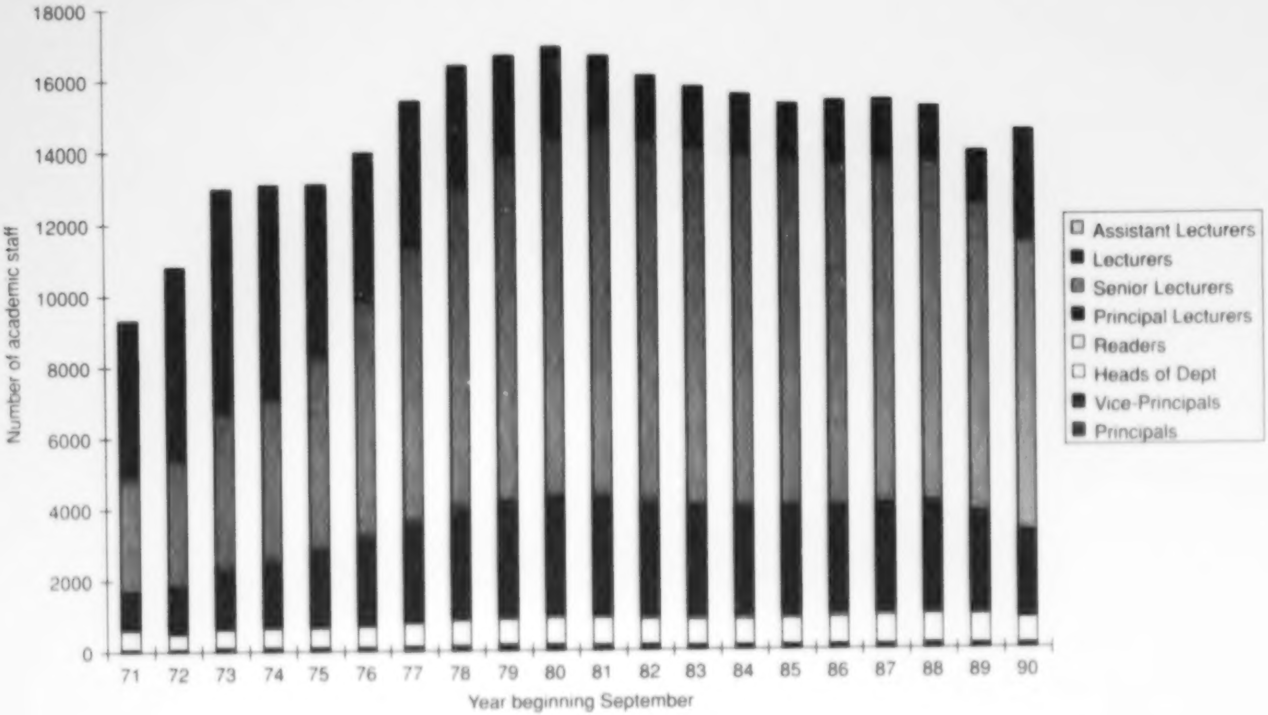
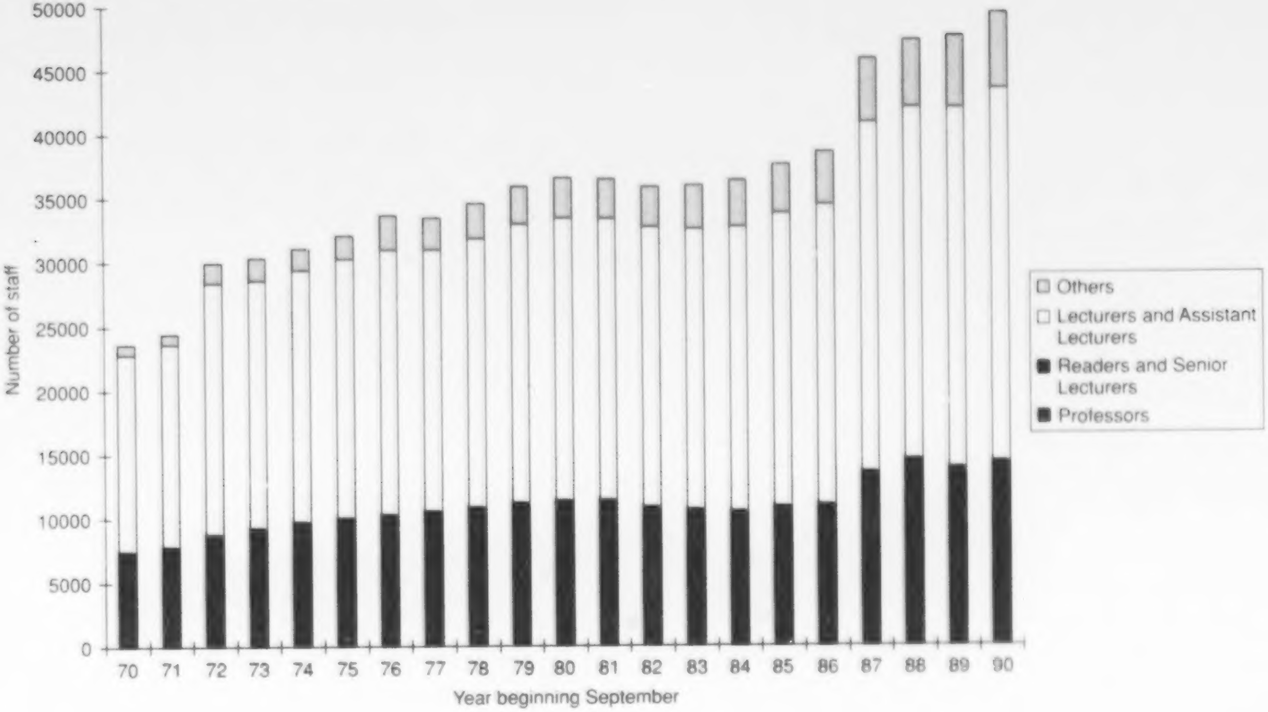


*Figure 5.2* Grade of full-time teaching and research staff in universities, 1970–71 to 1990–91



Principal (Director)
Vice-Principal (Assistant Director)
Head of Department
Principal Lecturer/Reader
Senior Lecturer
Lecturer II
Lecturer I
Assistant Lecturer.

The number of senior posts and individuals' progression to them were determined by complex rules, but broadly related to the level of work in a college. Thus, in 1971, 45 per cent of full-time staff were at lecturer I, II or assistant lecturer grades (Table 5.1). There were only about 1,600 staff or 17 per cent on the senior grades of Principal Lecturer (PL) and above. With growth continuing to the end of the decade, by 1980 the number of posts at PL or above had nearly trebled to over 4,300, with the largest increase among principal lecturers themselves. These senior staff now comprised a quarter of all staff. The number on lecturer grades actually started to fall, to below 2,500 or 15 per cent of the total by 1980. The main grade was now senior lecturer with more than 10,000 staff representing nearly two-thirds of the total.

These opportunities in the polytechnics contrasted with the more limited growth in senior grades in the universities at this time. Between 1970 and 1980, the number of senior lecturers (the grade comparable to PL in polytechnics) and professors increased by only 52 per cent. Although they represented a larger percentage of all university staff in 1980 (31 per cent) than did senior staff in polytechnics, this figure was virtually unchanged from that in 1970. Farnham (1985) sums up this decade for both polytechnics and universities as one where 'the emerging pattern was one of high rates of staff recruitment, progressive career development, generally satisfactory terms and conditions of employment and high job security'. If anything this was even truer of polytechnics than the universities.

## The later years: contraction

Whilst Farnham's summary may be accurate overall, it is worth remembering that the polytechnics were already feeling the initial effects of constraint. As we saw in Chapter 1, many of them amalgamated with colleges of education during the 1970s. Some of the increases in polytechnic staff numbers arose from this, but not all staff from the colleges were absorbed. A scheme of premature retirement (the 'Crombie' scheme) was available for those qualified; some of the staff from the colleges who joined polytechnics were subsequently able to take advantage of the scheme to leave them.

The experience at Wolverhampton Polytechnic illustrates the confusing effects that these changes had. In 1977, Dudley and Wolverhampton Colleges of Education joined the Polytechnic. Their staffs were asked to identify work under two headings – curriculum and academic subject – and on this basis they were allocated to the new Faculty of Education or a faculty appropriate for their subject specialism. This exercise went hand in hand with negotiations for voluntary redundancy, and the number of staff joining was halved by Crombie retirements (Smith, 1983).

The development of the polytechnics in the 1980s took place in a very different climate from the 1970s. The government's desire to control public sector expenditure and a predicted decline in numbers of qualified 18-year-olds meant that the period of rapid expansion of staffing was over. Even though students defied the forecasters and continued to enrol at polytechnics, from 1981 the number of full-time staff declined (Figure 5.1). It dropped from nearly 17,000 in 1980 to just over 15,300 in 1985 and, even though more polytechnics were designated, by 1990 the total number of staff in all polytechnics had fallen to 14,552 (Table 5.1).

The trend towards an ever-increasing proportion of senior staff was now reversed. The number of PLs and above dropped, astonishingly, by more than 1,000. The 3,075 lecturers comprised 21 per cent of the total compared with 15 per cent a decade earlier. These figures point to one of the problems that began to emerge in the career structure for staff in polytechnics in the 1980s. There was an increasing number of senior lecturers with, in effect, nowhere to go in the career structure. The proportion of senior grades was established by the Burnham Committee as 25 per cent of teacher establishment, and with the reduction in numbers, there was a consequent decline in senior positions, creating a problem of 'blockage' (Farnham, 1985).

There were further implications of the major changes which took place in the late 1980s. With substantial numbers of older and senior staff taking early retirement and voluntary redundancy as a result of financial constraint, the age profile of staff in polytechnics changed. In 1985, there were nearly 3,100 staff aged 45–49, but five years later (1990), the cohort aged 50–54 was under 2,400, a decline of nearly a quarter despite the inclusion of staff from three additional polytechnics designated in the meantime (Table 5.3 and Figure 5.3). The decline is even more marked among the over-50s. In 1985, the 50–54 cohort numbered just over 2,400; in 1990, the numbers aged 55–59 had dwindled to 1,314, a drop of 46 per cent. These were substantial losses, greater than those in the universities, which also experienced these problems. Table 5.4 and Figure 5.4 show, for example, that the percentage decline in the university cohort aged 45–49 in 1985 was only half that of the polytechnics.

The reduction in academic staff establishments meant there were limited opportunities for new appointments and, as many staff had been in post a considerable time, this led to a distorted age profile. For example, at Leicester Polytechnic less than 30 per cent of the staff were under 40, and over 40 per cent were between 40 and 50 (HMI, 1988b). The HMI commentary on the polytechnics in 1989 concluded that there was a need for 'new blood' appointments (HMI, 1989a). The data show that there was modest evidence

*Figure* 5.3 Age of full-time academic staff in polytechnics, 1985 and 1990

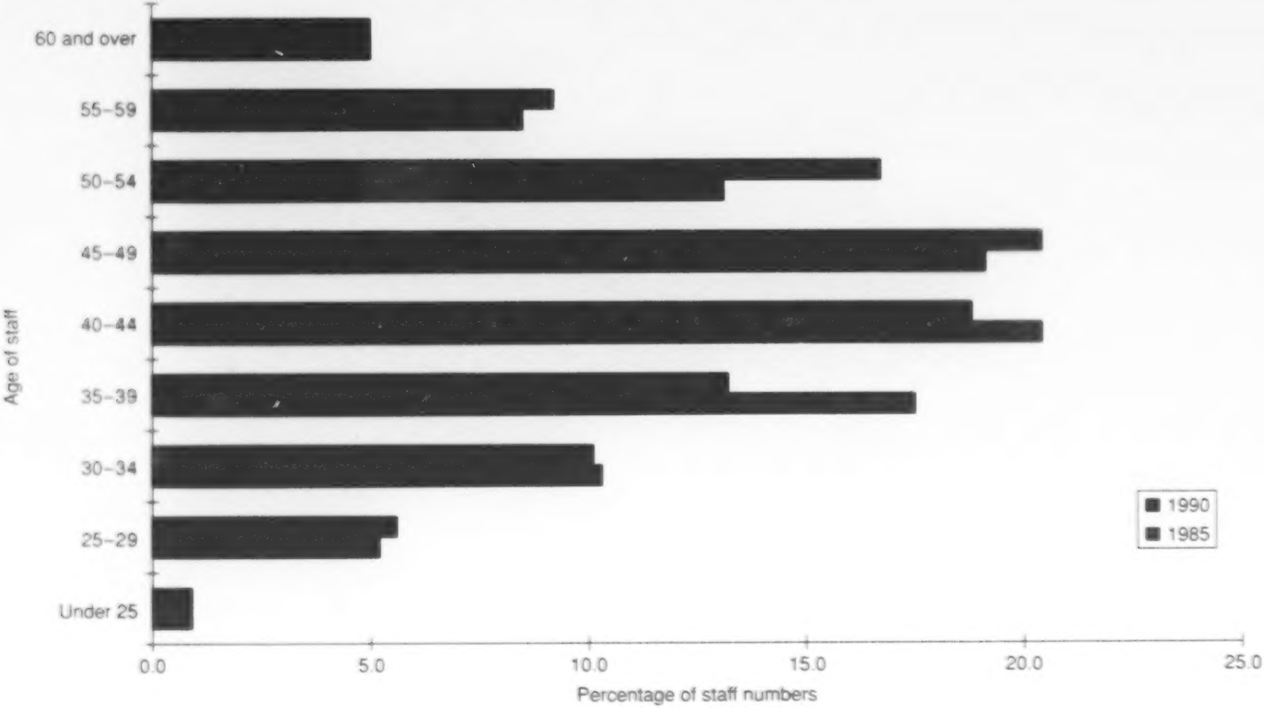


*Table 5.3* Age of full-time teachers in polytechnics, 1985–86 and 1990–91

| | *1985* | | *1990* | |
|---|---|---|---|---|
| | *Total* | % | *Total* | % |
| Under 25 | 28 | 0.2 | 21 | 0.1 |
| 25–29 | 378 | 2.4 | 432 | 3.0 |
| 30–34 | 1231 | 8.5 | 1119 | 7.7 |
| 35–39 | 3177 | 20.5 | 2018 | 13.8 |
| 40–44 | 3151 | 20.3 | 3591 | 24.6 |
| 45–49 | 3092 | 20.0 | 3223 | 22.1 |
| 50–54 | 2423 | 25.6 | 2392 | 16.4 |
| 55–59 | 1331 | 8.6 | 1314 | 9.0 |
| 60–64 | 564 | 3.6 | 472 | 3.2 |
| 65 and over | 25 | 0.2 | 30 | 0.2 |
| Total | 15400 | | 14612 | |

*Source:* Figures supplied by the Department for Education.

*Table 5.4* Age of full-time teaching and research staff in universities

| | *1985–86* | | *1990–91* | |
|---|---|---|---|---|
| | *Total* | % | *Total* | % |
| Under 25 | 247 | 0.9 | 248 | 0.9 |
| 25–29 | 1448 | 5.2 | 1565 | 5.6 |
| 30–34 | 2864 | 10.3 | 2833 | 10.1 |
| 35–39 | 4859 | 17.5 | 3696 | 13.2 |
| 40–44 | 5670 | 20.4 | 5256 | 18.8 |
| 45–49 | 5303 | 19.1 | 5683 | 20.4 |
| 50–54 | 3648 | 13.1 | 4676 | 16.7 |
| 55–59 | 2374 | 8.5 | 2558 | 9.2 |
| 60 and over | 1401 | 5.0 | 1409 | 5.0 |
| Total | 27814 | | 27924 | |

*Source:* USR University Statistics, Students and Staff.
*Note:* Non-clinical staff paid wholly from university funds.

of this in 1990, with 432 staff aged 25–29 compared with 378 five years earlier (Table 5.3).

The figures also indicate another of the emerging problems for polytechnic staff. During the early 1970s, as the polytechnics experienced rapid growth and diversification in both students and staff, student : staff ratios were favourable and remained steady at 7.0 : 1 from 1972–73 to 1974–75 (Table 5.5). There were modest increases as student numbers increased faster than staff numbers, but the ratio was still only 8.4 : 1 in 1979. The

*Figure 5.4*  Age of teaching and research staff in universities, 1985 and 1990

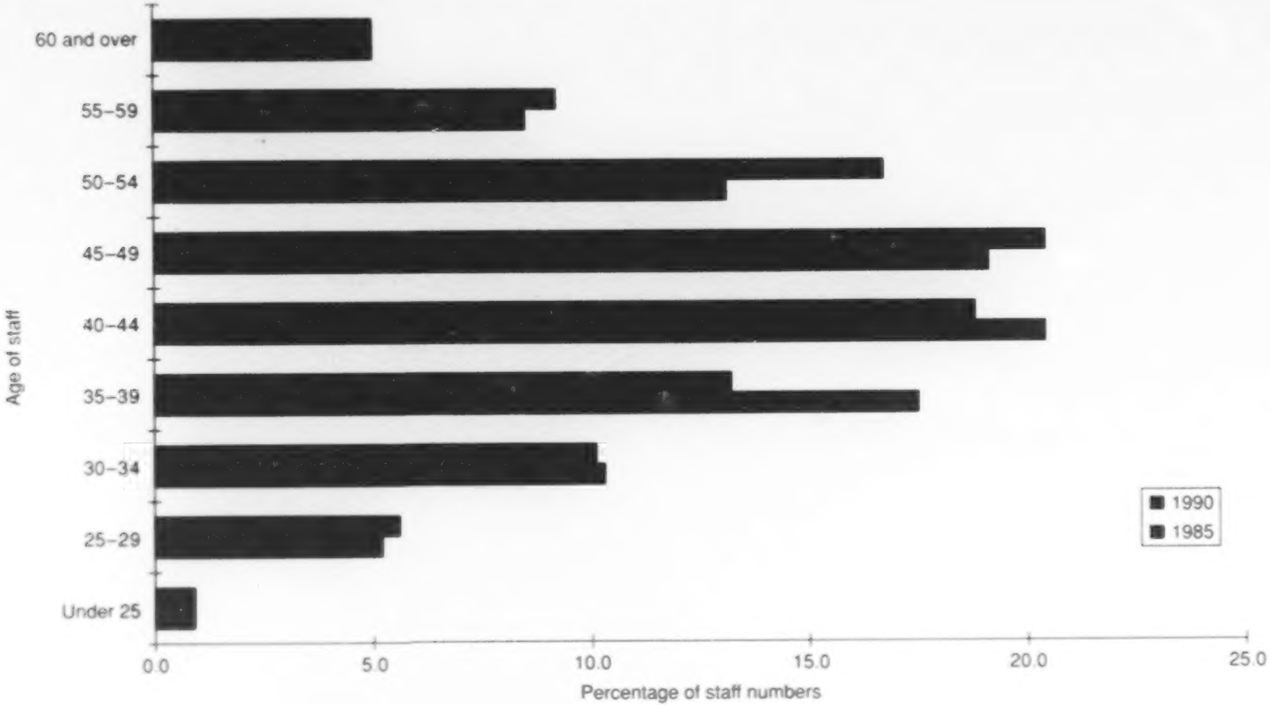


*Table* 5.5 Student : staff ratios in polytechnics

| | |
|---|---|
| 1972–73 | 7.0 |
| 1973–74 | 7.0 |
| 1974–75 | 7.0 |
| 1975–76 | 7.6 |
| 1976–77 | 8.1 |
| 1977–78 | 8.3 |
| 1978–79 | 8.3 |
| 1979–80 | 8.4 |
| 1980–81 | 8.8 |
| 1981–82 | 9.7 |
| 1982–83 | 10.3 |
| 1983–84 | 11.1 |
| 1984–85 | 11.6 |
| 1985–86 | 11.9 |
| 1986–87 | 12.3 |
| 1987–88 | 12.8 |
| 1988–89 | 13.6 |
| 1989–90 | 14.5 |
| 1990–91 | 15.5 |
| 1991–92 | 17.2 |

*Source*: 1972–78 calculated from Pooling Committee, Advanced Further Education in Polytechnics and Colleges of Further Education (including Colleges of Art) Report on Monitoring of Student : Staff Ratios 1979/80 (Spring term 1980) Table 5; DES Statistics of Education, Further Education, Student : Staff Ratios; DfE Statistics of Education, Further and Higher Education, Student : Staff Ratios and Unit Costs; PCFC, Student : Staff Ratios in Polytechnics and Colleges.

*Table* 5.6 University student : staff ratios (England)

| | |
|---|---|
| 1979 | 9.4 |
| 1985 | 10.3 |
| 1988 | 11.3 |
| 1989 | 11.8 |
| 1990 | 12.2 |
| 1991 | 12.4 |
| 1992 | 13.2 |

*Source*: Government Statistical Service, Higher Education Statistics for the United Kingdom, DfE, Departmental Report March 1995.

universities at this time had slightly higher ratios (though the basis of calculation was different) at 9.4 : 1 (Table 5.6). But as polytechnic staff numbers declined, and the predicted fall in student numbers failed to take place, this resulted in an ever-increasing student : staff ratio. By 1982 it exceeded 10 : 1 and by 1991–92 reached 17.2 : 1. The polytechnics were now operating

*Table* 5.7 Average class size in polytechnics

| | |
|---|---|
| 1979–80 | 12.2 |
| 1980–81 | 12.6 |
| 1981–82 | 13.7 |
| 1982–83 | 14.1 |
| 1983–84 | 14.6 |
| 1984–85 | 15.2 |
| 1985–86 | 15.7 |
| 1986–87 | 16.4 |
| 1987–88 | 16.6 |
| 1988–89 | 17.5 |
| 1989–90 | 18.5 |

*Source*: DES Statistics of Education, Further and Higher Education, Student : Staff Ratios; DfE Statistics of Education, Student : Staff Ratios and Unit Costs.

at much higher SSRs than the universities, who had reached only 12.2 : 1 by 1990 (Table 5.6). Polytechnic lecturers were becoming ever-more productive, but feeling increasingly under pressure (Halsey, 1992) and their circumstances were worsening much faster than their colleagues in universities. The increase in SSRs was reflected in increasing average class sizes in polytechnics (Table 5.7); these grew from just over 12 in 1979 to nearly 19 by 1989.

Whilst these changes increasingly raised concern about the pressures polytechnic staff were under, they perceived the quality of their work as rising (Halsey, 1992). The percentage seeing their own faculty as above average in teaching undergraduates rose from 58 per cent in 1976 to 66 per cent in 1989. The figures for their perceptions in research rose from 20 to 24 per cent, and the overall rating of their faculty's quality as above average rose from 46 to 51 per cent. Part of the explanation may be that in terms of formal 'contact' teaching hours, the workload remained roughly the same (between 1979 and 1989) at about 13 hours per week for staff teaching advanced work (Table 5.8). This does not of course take account of the 'iceberg effect' (Pratt and Silverman, 1988) of additional marking, preparation and administrative duties associated with larger student numbers and teaching groups.

Interestingly, too, staff did not perceive students' academic quality on graduation as significantly worsening: 32 per cent stated that it remained the same as in past years, and 50 per cent that it was now better. Again, some of the explanation may lie in patterns of teaching. Students spent slightly less time in formal contact with staff in 1989 than in 1979 (Table 5.9), reflecting increased commitment to private study and investigative work. The majority of staff also saw the quality of their students on entry as either remaining the same (26 per cent) or better (36 per cent). This suggests that staff were increasingly seeing their work as adding value through

*Table 5.8* Average lecturer hours in polytechnics

| | *Advanced* | *Non-advanced* | *All work* |
|---|---|---|---|
| 1979–80 | 13.0 | 16.2 | 13.0 |
| 1980–81 | 13.2 | 14.1 | 13.2 |
| 1981–82 | 13.4 | 15.6 | 13.5 |
| 1982–83 | 13.3 | 15.0 | 13.4 |
| 1983–84 | 13.2 | 14.9 | 13.3 |
| 1984–85 | 13.1 | 15.1 | 13.2 |
| 1985–86 | 13.2 | 15.6 | 13.3 |
| 1986–87 | 12.9 | 15.7 | 13.0 |
| 1987–88 | 13.1 | 15.1 | 13.2 |
| 1988–89 | 12.8 | 15.5 | 12.9 |
| 1989–90 | 12.9 | 15.1 | 13.0 |

*Source:* DES Statistics of Education, Further Education, Student : Staff Ratios; DfE Statistics of Education, Further and Higher Education, Student : Staff Ratios and Unit Costs.

*Table 5.9* Average student hours in polytechnics

| | *Advanced* | *Non-advanced* | *All work* |
|---|---|---|---|
| 1979–80 | 18.7 | 28.9 | 18.9 |
| 1980–81 | 18.6 | 27.7 | 18.9 |
| 1981–82 | 18.9 | 26.4 | 19.2 |
| 1982–83 | 18.1 | 24.8 | 18.3 |
| 1983–84 | 17.4 | 23.4 | 17.5 |
| 1984–85 | 17.2 | 23.1 | 17.3 |
| 1985–86 | 17.3 | 24.2 | 17.5 |
| 1986–87 | 17.1 | 24.6 | 17.3 |
| 1987–88 | 16.8 | 24.6 | 17.0 |
| 1988–89 | 16.4 | 22.9 | 16.7 |
| 1989–90 | 16.4 | 13.6 | 16.6 |

*Source:* DES Statistics of Education, Further Education, Student : Staff Ratios; DfE Statistics of Education, Further and Higher Education, Student : Staff Ratios and Unit Costs

the learning experience to the ability of students on entry to their course of study, despite the constraints.

## The changing characteristics of staff

Looking in more detail behind the numbers of staff reveals the process by which a teaching staff originally engaged to work in the further education sector was transformed into an academic group of comparable status to the university sector that Robinson (1968) forecast. In 1971 the majority of staff in the new polytechnics had been teachers in the constituent

*Table 5.1* Academic staff in polytechnics, by grade

| | Principals | | Vice-Principals | | Heads of Dept | | Readers | | Principal Lecturers | | Senior Lecturers | | Lecturers 2 | | Lecturers 1 | | Assist Lecturers | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | |
| 1971–72 | 30 | 0.3 | 45 | 0.5 | 557 | 5.7 | 23 | 0.2 | 1042 | 10.6 | 3177 | 32.3 | 3496 | 35.6 | 868 | 8.8 | 75 | 0.8 | 9825 |
| 1972–73 | 30 | 0.3 | 49 | 0.5 | 442 | 4.1 | 23 | 0.2 | 1295 | 12.0 | 3567 | 33.0 | 4565 | 42.3 | 783 | 7.2 | 48 | 0.4 | 10802 |
| 1973–74 | 30 | 0.2 | 77 | 0.6 | 527 | 4.1 | 34 | 0.3 | 1657 | 12.8 | 4401 | 33.9 | 5440 | 41.9 | 780 | 6.0 | 36 | 0.3 | 12982 |
| 1974–75 | 30 | 0.2 | 82 | 0.6 | 565 | 4.3 | 33 | 0.3 | 1793 | 13.7 | 4638 | 35.4 | 5383 | 41.1 | 559 | 4.3 | 26 | 0.2 | 13109 |
| 1975–76 | 30 | 0.2 | 84 | 0.6 | 567 | 4.3 | 38 | 0.3 | 2178 | 16.6 | 5439 | 41.5 | 4507 | 34.4 | 268 | 2.0 | | | 13111 |
| 1976–77 | 30 | 0.2 | 87 | 0.6 | 598 | 4.3 | 43 | 0.3 | 2454 | 17.5 | 6620 | 47.3 | 3927 | 28.0 | 249 | 1.8 | | | 14008 |
| 1977–78 | 30 | 0.2 | 105 | 0.7 | 664 | 4.3 | 47 | 0.3 | 2772 | 18.0 | 7757 | 50.3 | 3832 | 24.8 | 222 | 1.4 | | | 15429 |
| 1978–79 | 30 | 0.2 | 116 | 0.7 | 729 | 4.4 | 49 | 0.3 | 3098 | 18.8 | 9011 | 54.8 | 3236 | 19.7 | 162 | 1.0 | | | 16436 |
| 1979–80 | 30 | 0.2 | 126 | 0.8 | 748 | 4.5 | 66 | 0.4 | 3232 | 19.4 | 9685 | 58.0 | 2675 | 16.0 | 135 | 0.8 | | | 16697 |
| 1980–81 | 30 | 0.2 | 130 | 0.8 | 784 | 4.6 | 78 | 0.5 | 3334 | 19.7 | 10112 | 59.7 | 2348 | 13.9 | 111 | 0.7 | | | 16927 |
| 1981–82 | 30 | 0.2 | 122 | 0.7 | 775 | 4.6 | 85 | 0.5 | 3323 | 19.9 | 10368 | 62.1 | 1880 | 11.3 | 105 | 0.6 | | | 16688 |
| 1982–83 | 30 | 0.2 | 115 | 0.7 | 744 | 4.6 | 83 | 0.5 | 3187 | 19.8 | 10202 | 63.3 | 1657 | 10.3 | 94 | 0.6 | | | 16112 |
| 1983–84 | 30 | 0.2 | 105 | 0.7 | 734 | 4.6 | 80 | 0.5 | 3087 | 19.5 | 10079 | 63.8 | 1581 | 10.0 | 97 | 0.6 | | | 15793 |
| 1984–85 | 30 | 0.2 | 100 | 0.6 | 738 | 4.7 | 99 | 0.6 | 3033 | 19.5 | 9967 | 64.0 | 1507 | 9.7 | 102 | 0.7 | | | 15576 |
| 1985–86 | 30 | 0.2 | 97 | 0.6 | 745 | 4.9 | 102 | 0.7 | 3018 | 19.7 | 9754 | 63.7 | 1473 | 9.6 | 83 | 0.5 | | | 15302 |
| 1986–87 | 32 | 0.2 | 93 | 0.6 | 790 | 5.1 | 106 | 0.7 | 2995 | 19.4 | 9672 | 62.8 | 1629 | 10.6 | 83 | 0.5 | | | 15400 |
| 1987–88 | 34 | 0.2 | 88 | 0.6 | 837 | 5.4 | 90 | 0.6 | 3043 | 19.7 | 9660 | 62.6 | 1580 | 10.2 | 89 | 0.6 | | | 15421 |
| 1988–89 | 35 | 0.2 | 103 | 0.7 | 855 | 5.6 | 74 | 0.5 | 3038 | 20.0 | 9606 | 63.2 | 1496 | 9.8 | | | | | 15207 |
| 1989–90 | 32 | 0.2 | 93 | 0.7 | 839 | 6.0 | 75 | 0.5 | 2801 | 20.1 | 8671 | 62.1 | 1448 | 10.4 | | | | | 13960 |
| 1990–91 | 34 | 0.2 | 87 | 0.8 | 738 | 5.1 | 56 | 0.4 | 2371 | 16.3 | 8191 | 56.3 | 3075 | 21.1 | | | | | 14552 |

*Source*: DES Statistics of Education, Teachers (Annual).
*Note*: Figures based on pension data.

*Table 5.2* Full-time teaching and research staff in universities in England and Wales

| | *Professors* | | *Readers and Senior Lecturers* | | *Lecturers and Assistant Lecturers* | | *Others* | | *Total* |
|---|---|---|---|---|---|---|---|---|---|
| | *Total* | *%* | *Total* | *%* | *Total* | *%* | *Total* | *%* | |
| 1970–71 | 2868 | 12.2 | 4588 | 19.4 | 15305 | 64.9 | 816 | 3.5 | 23591 |
| 1971–72 | 2918 | 12.2 | 4874 | 20.0 | 15808 | 64.9 | 830 | 3.4 | 24348 |
| 1972–73 | 3205 | 10.7 | 5580 | 18.6 | 19595 | 65.3 | 1612 | 5.4 | 29992 |
| 1973–74 | 3270 | 10.8 | 6005 | 19.8 | 19324 | 63.6 | 1776 | 5.8 | 30375 |
| 1974–75 | 3406 | 10.9 | 6351 | 20.4 | 19677 | 63.2 | 1677 | 5.4 | 31111 |
| 1975–76 | 3485 | 10.9 | 6569 | 20.5 | 20226 | 63.0 | 1834 | 5.7 | 32114 |
| 1976–77 | 3585 | 10.6 | 6729 | 20.0 | 20672 | 61.4 | 2698 | 8.0 | 33684 |
| 1977–78 | 3616 | 10.8 | 6915 | 20.6 | 20438 | 61.0 | 2521 | 7.5 | 33490 |
| 1978–79 | 3670 | 10.6 | 7202 | 20.8 | 21000 | 60.7 | 2745 | 7.9 | 34617 |
| 1979–80 | 3761 | 10.5 | 7431 | 20.7 | 21761 | 60.6 | 2983 | 8.3 | 35946 |
| 1980–81 | 3817 | 10.4 | 7551 | 20.6 | 22088 | 60.3 | 3156 | 8.6 | 36612 |
| 1981–82 | 3784 | 10.4 | 7632 | 20.9 | 21973 | 60.2 | 3118 | 8.5 | 36507 |
| 1982–83 | 3519 | 9.8 | 7348 | 20.5 | 21856 | 60.9 | 3142 | 8.8 | 35864 |
| 1983–84 | 3417 | 9.5 | 7234 | 20.1 | 21927 | 61.0 | 3391 | 9.4 | 35969 |
| 1984–85 | 3426 | 9.4 | 7096 | 19.5 | 22219 | 61.1 | 3652 | 10.0 | 36393 |
| 1985–86 | 3554 | 9.5 | 7305 | 19.4 | 22916 | 60.9 | 3824 | 10.2 | 37599 |
| 1986–87 | 3659 | 9.5 | 7374 | 19.1 | 23427 | 60.7 | 4114 | 10.7 | 38574 |
| 1987–88 | 4424 | 9.6 | 9138 | 19.9 | 27336 | 59.6 | 4980 | 10.9 | 45878 |
| 1988–89 | 5389 | 9.5 | 9122 | 19.7 | 27560 | 59.5 | 5211 | 11.3 | 46282 |
| 1989–90 | 4539 | 9.5 | 9334 | 19.6 | 28134 | 59.1 | 5579 | 11.7 | 47586 |
| 1990–91 | 4806 | 9.7 | 9524 | 19.3 | 29144 | 59.0 | 5903 | 12.0 | 49377 |

*Source*: UGC Statistics of Education, Universities; USR University Statistics, Students and Staff.
*Note*: From 1987 for Great Britain; 1970 to 1972 only staff paid from general university funds.

colleges, many of them technical teachers from colleges of technology. They had a range of distinctive characteristics, but as the polytechnics developed, they were gradually replaced by different kinds of staff with different characteristics.

Whitburn *et al.* (1976) provided a profile of the 1972–73 staff group. Although they reveal distinct differences between the different faculties, there were already differences between the profiles of staff who had over ten years' service and those of newer recruits with less than five years' service, appointed since the polytechnic policy. Staff in the Engineering and Technology faculties were on average less well qualified, older, and more senior, than staff in other subject areas. On the other hand, Science, Language, Literature and Area studies teachers were better qualified in terms of class of first degree and postgraduate qualifications, younger, and more junior than their colleagues in other faculties.

Whitburn *et al.* (1976) also asked staff why they chose to teach in a polytechnic. The answers must be interpreted cautiously, as respondents were recalling choices made several years previously, where several factors might have been at work. There was some indication of a commitment by staff to the new form of education that the polytechnics promised. Whilst one-fifth of staff felt that their qualifications were not adequate to get them in to university teaching, staff who were wholly involved in degree course work were more confident about their qualifications as entry to university teaching. Forty-five per cent said they were attracted by the opportunities offered by polytechnics for innovation and the development of new courses. Only 10 per cent said they were attracted by the salary.

The 1966 White Paper foresaw a community of teachers with close links with industry. The Whitburn *et al.* survey asked respondents about employment prior to joining their polytechnic. A trend counter to the intentions of the policy is discernible, with newer recruits less likely to have a background in industry, commerce and the professions. While 46 per cent of staff with over ten years' experience had such a background, only 23 per cent of recent recruits had previously worked in industry or commerce. It was also apparent that staff working on non-degree courses were more likely to have an industrial or commercial background than their colleagues engaged in teaching on degrees. Staff with over ten years' experience were also more likely to have professional qualifications than recent recruits (Whitburn *et al.*, 1976).

The expansion of the polytechnics into areas outside technology was also reflected in the changing pattern of the distribution of staff. Halsey, who undertook two major surveys in 1976 and 1989, found a decline in the percentages of respondents in polytechnics in Engineering and Technology from 21 to 14 per cent, while those in Social Sciences, Administration and Business rose, from 28 to 31 per cent and in Science from 19 to 26 per cent (Halsey, 1992).

Whitburn *et al.* (1976) revealed a trend towards the recruitment of better qualified staff in the polytechnics. Staff with over ten years' service were less

*Table 5.10* Qualifications and teaching experience of polytechnic staff, 1972–73

| | *Less than 5 years %* | *5–10 years %* | *10+ years %* | *All staff %* |
|---|---|---|---|---|
| First degree | 88 | 85 | 77 | 82 |
| Good first degree | 44 | 41 | 34 | 41 |
| Masters degree | 32 | 33 | 23 | 31 |
| PhD | 17 | 20 | 8 | 16 |
| Professional qualification | 57 | 75 | 83 | 67 |

*Source*: Whitburn *et al.*, 1976.

likely to have a first degree, 'good' first degree, or postgraduate qualification than recruits with less than five years' experience (Table 5.10).

Pratt (1974b) reported a survey of heads of department showing comparable results: 42 per cent had a higher degree, but 21 per cent – mostly in professional areas – had no degree at all; 72 per cent had professional experience outside of teaching. Whitburn *et al.* (1976) hypothesized that, as 'academic drift' continued and more degree courses developed at the expense of lower level work, the process of recruiting staff with academic skills would continue, at the expense of industrial, commercial and professional backgrounds.

Subsequent data confirm this to an extent. Halsey's (1992) survey found that polytechnic teachers in 1989 had higher qualifications than those in the data for earlier years, but there was still a substantial difference between them and university teachers. Only 16 per cent of polytechnic teachers had first class honours degrees, compared with 42 per cent of university teachers, and only 32 per cent had doctorates, compared with 69 per cent of university teachers.

The polytechnic policy embodied the concept of the 'mixed community' of staff and students, and the vision of opportunities for higher education to those outside traditional university catchment, particularly opportunities for social mobility. To what extent, then, did the background of staff, in terms of social class and education, reflect a wider spectrum than the traditional university providers? Halsey asked his respondents to state their father's profession, as an indicator of social class. In polytechnics, 22 per cent in 1976 and 21 per cent in 1989 had a manual background. This compared with 16 per cent and 12 per cent respectively for university respondents, suggesting that the polytechnic academic community did indeed reflect wider class origins than the universities (Halsey, 1992).

Education background provides another indicator of the social origins of staff. Table 5.11 combines figures from the surveys cited above. The picture that emerges is not wholly consistent with the policy. The polytechnics had fewer staff educated in independent schools, though the percentage varied over the years and is still higher than the percentage of the population as a whole with an independent education. The data do not appear to wholly

*Table 5.11* Educational background of polytechnic and university staff

| | *Polytechnic 1972 %* | *Polytechnic 1976 %* | *University 1976 %* | *Polytechnic 1989 %* | *University 1989 %* |
|---|---|---|---|---|---|
| Independent/public | 14 | 9 | 15 | 11 | 20 |
| Direct grant | 9 | 11 | 15 | 12 | 15 |
| Maintained grammar | 60 | 58 | 51 | 50 | 47 |
| Comprehensive | | 12 | 38 | 10 | 6 |
| Other | 17 | 10 | 13 | 15 | 11 |

*Source:* 1972 data Whitburn *et al.*, 1976; 1976 and 1989 data Halsey, 1992.
*Note:* Comprehensive category not included in Whitburn *et al.*, survey.

reflect changes in the secondary education system where grammar schools were replaced by comprehensive education, indicative perhaps of the limited numbers of young new appointments. In other respects, the table does not suggest major changes over the 17 years, or a very different educational background between the two groups of staff. The differences are probably fewer than Robinson (1968), for example, might have hoped.

An indication of the distinctiveness of polytechnic staff is seen in their political allegiances. Halsey (1992) found, in 1976 and 1989, that Labour was the most popular party among polytechnic staff (at 48 and 44 per cent), and that support for the Conservatives dropped over the period. Within the overall figures there are faculty variations: in 1976 the Conservatives were more popular among polytechnic Engineering and Technology teachers and in the Natural Sciences. In both areas this support had declined considerably by 1989, switching to the centre and other parties. In the Arts and Social Sciences there was a majority for Labour, and this increased between the two surveys, from 58 to 59 per cent among Arts staff, and from 48 to 51 per cent among Social Scientists. This diminishing support by polytechnic staff for the Conservative government of the time might be related to the rise in trade union activity. Among the respondents to Halsey's survey, union membership had risen from 61 to 78 per cent, with a considerable rise in attendance at union meetings.

## Women

Whilst the number of women in the student population increased significantly in the first years of the polytechnics (see Chapter 3), the numbers of women academics remained low. In 1971 there were only 1,021 full-time female academics in the polytechnics, a mere 10 per cent of the total (Table 5.12). DES data do not show part-time teachers, so the figures here probably underestimate the numbers of women.

Even more revealing is their distribution in the hierarchy (Table 5.13): 72 per cent of women were at lecturer or assistant lecturer grade compared

*Table 5.12* Sex of academic staff in polytechnics

| | *Men* | *Women* | *Women % of total* | *Total all staff* |
|---|---|---|---|---|
| 1971–72 | 8804 | 1021 | 10.39 | 9825 |
| 1972–73 | 9642 | 1160 | 10.74 | 10802 |
| 1973–74 | 11592 | 1390 | 10.71 | 12982 |
| 1974–75 | 11691 | 1418 | 10.82 | 13109 |
| 1975–76 | 11566 | 1545 | 11.78 | 13111 |
| 1976–77 | 12234 | 1774 | 12.66 | 14008 |
| 1977–78 | 13311 | 2118 | 13.73 | 15429 |
| 1978–79 | 14099 | 2337 | 14.22 | 16436 |
| 1979–80 | 14271 | 2426 | 14.53 | 16697 |
| 1980–81 | 14494 | 2433 | 14.37 | 16927 |
| 1981–82 | 14301 | 2387 | 14.30 | 16688 |
| 1982–83 | 13828 | 2284 | 14.18 | 16112 |
| 1983–84 | 13551 | 2242 | 14.20 | 15793 |
| 1984–85 | 13311 | 2265 | 14.54 | 15576 |
| 1985–86 | 13003 | 2299 | 15.02 | 15302 |
| 1986–87 | 12953 | 2447 | 15.89 | 15400 |
| 1987–88 | 12859 | 2562 | 16.61 | 15421 |
| 1988–89 | 12609 | 2598 | 17.08 | 15207 |
| 1989–90 | 11418 | 2542 | 18.21 | 13960 |
| 1990–91 | 11679 | 2873 | 19.74 | 14552 |
| 1991–92 | 12074 | 3327 | 21.60 | 15401 |

*Source*: DES/DfE Statistics of Education, Teachers.

to 57 per cent of men. None of the Directors was female; in fact it was not until 1986 that the first woman was appointed as Director (at South Bank Polytechnic). Only 58 women were in senior positions in 1971, representing just 6 per cent of all women, while 17 per cent of their male colleagues had achieved senior status.

The polytechnics were not unique in this. In the universities the proportion of women staff was also small. There were only 11 per cent in 1972 and most of these were in junior grades; only 60 out of over 3,000 professors were women (Table 5.14).

One explanation of the under-representation of women in the polytechnic academic community, and their junior status, lies in the development of polytechnics from technical colleges. Whitburn *et al.* (1976) found that, in 1972–73, only 4 per cent of women in their sample were from Engineering and Technology faculties, a traditionally male area, compared with 31 per cent in the developing areas of Social Administration and Business Studies, and 19 per cent in the Professional and Vocational area (this does not explain the universities' position, however).

As the numbers of staff increased during the 1970s, the number of women joining the polytechnics increased more rapidly than the number of men

*Table 5.13* Academic staff in polytechnics by sex and grade

| | *Principals* | | | *Vice-Principals* | | | *Heads of Dept* | | | *Readers* | | | *Principal Lecturers* | | | *Senior Lecturers* | | | *Lecturers 2* | | | *Lecturers 1* | | | *Assist Lecturers* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % | *M* | *F* | % |
| 1971–72 | 30 | 0 | 0.0 | 44 | 1 | 2.3 | 542 | 15 | 2.8 | 23 | 0 | 0.0 | 1000 | 42 | 4.2 | 2944 | 233 | 7.9 | 2944 | 552 | 18.8 | 709 | 159 | 22.4 | 56 | 19 | 33.9 |
| 1972–73 | 30 | 0 | 0.0 | 49 | 0 | 0.0 | 428 | 14 | 3.3 | 23 | 0 | 0.0 | 1233 | 62 | 5.0 | 3289 | 278 | 8.5 | 3914 | 651 | 16.6 | 639 | 144 | 22.5 | 37 | 11 | 29.7 |
| 1973–74 | 30 | 0 | 0.0 | 76 | 1 | 1.3 | 511 | 16 | 3.1 | 34 | 0 | 0.0 | 1583 | 74 | 4.7 | 4068 | 333 | 8.2 | 4641 | 799 | 17.2 | 622 | 158 | 25.4 | 27 | 9 | 33.3 |
| 1974–75 | 30 | 0 | 0.0 | 81 | 1 | 1.2 | 545 | 20 | 3.7 | 33 | 0 | 0.0 | 1716 | 77 | 4.5 | 4260 | 378 | 8.9 | 4564 | 819 | 17.9 | 444 | 115 | 25.9 | 18 | 8 | 44.4 |
| 1975–76 | 30 | 0 | 0.0 | 82 | 2 | 2.4 | 541 | 26 | 4.8 | 38 | 0 | 0.0 | 2060 | 118 | 5.7 | 4925 | 514 | 10.4 | 3698 | 809 | 21.9 | 192 | 76 | 39.6 | | | |
| 1976–77 | 30 | 0 | 0.0 | 84 | 3 | 3.6 | 571 | 27 | 4.7 | 42 | 1 | 2.4 | 2289 | 165 | 7.2 | 5954 | 666 | 11.2 | 3083 | 844 | 27.4 | 181 | 68 | 37.6 | | | |
| 1977–78 | 30 | 0 | 0.0 | 99 | 6 | 6.1 | 625 | 39 | 6.2 | 46 | 1 | 2.2 | 2567 | 205 | 8.0 | 6840 | 917 | 13.4 | 2946 | 886 | 30.1 | 158 | 64 | 40.5 | | | |
| 1978–79 | 30 | 0 | 0.0 | 111 | 5 | 4.5 | 683 | 46 | 6.7 | 48 | 1 | 2.1 | 2849 | 249 | 8.7 | 7839 | 1172 | 15.0 | 2421 | 815 | 33.7 | 113 | 49 | 43.4 | | | |
| 1979–80 | 30 | 0 | 0.0 | 119 | 7 | 5.9 | 700 | 48 | 6.9 | 64 | 2 | 3.1 | 2969 | 263 | 8.9 | 8347 | 1338 | 16.0 | 1951 | 724 | 37.1 | 91 | 44 | 48.4 | | | |
| 1980–81 | 30 | 0 | 0.0 | 125 | 5 | 4.0 | 737 | 47 | 6.4 | 76 | 2 | 2.6 | 3073 | 261 | 8.5 | 8690 | 1422 | 16.4 | 1693 | 655 | 38.7 | 70 | 41 | 58.6 | | | |
| 1981–82 | 30 | 0 | 0.0 | 117 | 5 | 4.3 | 731 | 44 | 6.0 | 82 | 3 | 3.7 | 3079 | 244 | 7.9 | 8866 | 1502 | 16.9 | 1330 | 550 | 41.4 | 66 | 39 | 59.1 | | | |
| 1982–83 | 30 | 0 | 0.0 | 110 | 5 | 4.5 | 705 | 39 | 5.5 | 80 | 3 | 3.8 | 2969 | 218 | 7.3 | 8701 | 1501 | 17.3 | 1177 | 480 | 40.8 | 56 | 38 | 67.9 | | | |
| 1983–84 | 30 | 0 | 0.0 | 100 | 5 | 5.0 | 693 | 41 | 5.9 | 77 | 3 | 3.9 | 2878 | 209 | 7.3 | 8607 | 1472 | 17.1 | 1109 | 472 | 42.6 | 57 | 40 | 70.2 | | | |
| 1984–85 | 30 | 0 | 0.0 | 95 | 5 | 5.2 | 689 | 49 | 7.1 | 94 | 5 | 5.3 | 2828 | 205 | 7.2 | 8472 | 1495 | 17.6 | 1043 | 464 | 44.5 | 60 | 42 | 70.0 | | | |
| 1985–86 | 30 | 0 | 0.0 | 93 | 4 | 4.3 | 692 | 53 | 7.7 | 98 | 4 | 4.1 | 2800 | 218 | 7.3 | 8242 | 1512 | 18.3 | 996 | 477 | 47.9 | 52 | 31 | 59.6 | | | |
| 1986–87 | 32 | 0 | 0.0 | 89 | 4 | 4.5 | 728 | 62 | 8.5 | 104 | 2 | 1.9 | 2765 | 230 | 8.3 | 8078 | 1594 | 19.7 | 1107 | 522 | 47.2 | 50 | 33 | 66.0 | | | |
| 1987–88 | 32 | 2 | 6.3 | 82 | 6 | 7.3 | 777 | 60 | 7.7 | 89 | 1 | 1.1 | 2781 | 262 | 9.4 | 7983 | 1677 | 21.0 | 1061 | 519 | 48.9 | 54 | 35 | 64.8 | | | |
| 1988–89 | 33 | 2 | 6.1 | 95 | 8 | 8.4 | 794 | 61 | 7.7 | 71 | 3 | 4.2 | 2762 | 276 | 10.0 | 7886 | 1720 | 21.8 | 968 | 528 | 54.5 | | | | | | |
| 1989–90 | 31 | 2 | 6.5 | 86 | 7 | 8.1 | 773 | 66 | 8.5 | 69 | 6 | 8.7 | 2517 | 284 | 11.3 | 7032 | 1639 | 23.3 | 910 | 538 | 59.1 | | | | | | |
| 1990–91 | 30 | 4 | 13 | 82 | 5 | 6.1 | 661 | 77 | 11.6 | 50 | 6 | 12.0 | 2128 | 243 | 11.4 | 6582 | 1609 | 24.4 | 2146 | 929 | 43.3 | | | | | | |

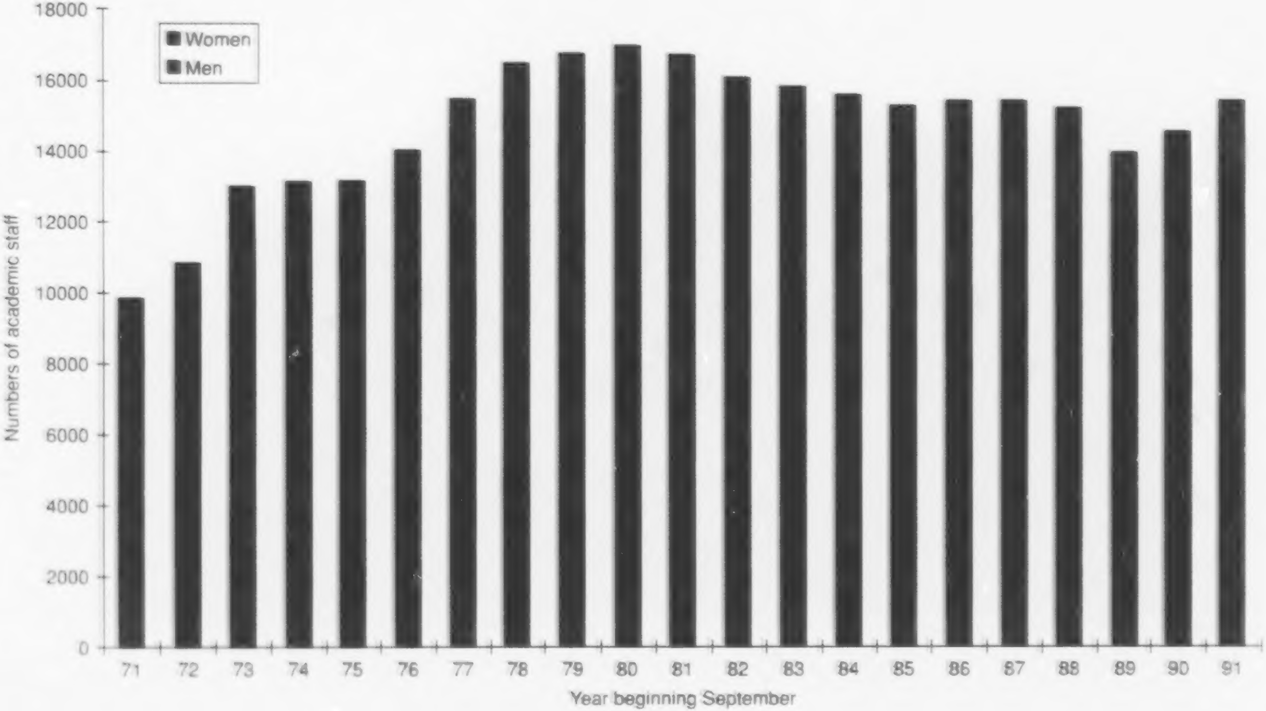
*Source:* DES Statistics of Education, Teachers (annual).
*Note:* Figures based on pension data.

*Table 5.14* Full-time academic staff in universities in England and Wales, by sex

| | *Professors* | | | *Readers and Senior Lecturers* | | | *Lecturers and Assistant Lecturers* | | | *Others* | | | *Total* | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Men* | *Women* | *Women as %* | *Men* | *Women* | *Women as %* | *Men* | *Women* | *Women as %* | *Men* | *Women* | *Women as %* | *Men* | *Women* | *Women as %* |
| 1972–73 | 3145 | 60 | 1.9 | 5219 | 361 | 6.5 | 17210 | 2385 | 12.2 | 1183 | 429 | 26.6 | 26757 | 3235 | 10.8 |
| 1973–74 | 3209 | 61 | 1.9 | 5611 | 394 | 6.6 | 16980 | 2344 | 12.1 | 1316 | 460 | 25.9 | 27116 | 3259 | 10.7 |
| 1974–75 | 3339 | 67 | 2.0 | 5946 | 405 | 6.4 | 17197 | 2480 | 12.6 | 1211 | 466 | 27.8 | 27693 | 3418 | 11.0 |
| 1975–76 | 3409 | 76 | 2.2 | 6159 | 410 | 6.2 | 17544 | 2682 | 13.3 | 1308 | 526 | 28.7 | 28420 | 3694 | 11.5 |
| 1976–77 | 3503 | 82 | 2.3 | 6286 | 443 | 6.6 | 17948 | 2742 | 13.3 | 1879 | 819 | 30.4 | 29616 | 4086 | 12.1 |
| 1977–78 | 3536 | 80 | 2.2 | 6460 | 455 | 6.6 | 17597 | 2841 | 13.9 | 1726 | 795 | 31.5 | 29319 | 4171 | 12.5 |
| 1978–79 | 3581 | 89 | 2.4 | 6737 | 465 | 6.5 | 17914 | 3086 | 14.7 | 1836 | 909 | 33.1 | 30068 | 4549 | 13.1 |
| 1979–80 | 3655 | 106 | 2.8 | 6957 | 474 | 6.4 | 18433 | 3328 | 15.3 | 1968 | 1015 | 34.0 | 31013 | 4923 | 13.7 |
| 1980–81 | 3711 | 106 | 2.8 | 7060 | 491 | 6.5 | 18616 | 3472 | 15.7 | 2087 | 1069 | 33.9 | 31474 | 5138 | 14.0 |
| 1981–82 | 3685 | 99 | 2.6 | 7115 | 517 | 6.8 | 18542 | 3431 | 15.6 | 2102 | 1016 | 32.6 | 31444 | 5063 | 13.9 |
| 1982–83 | 3434 | 85 | 2.4 | 6860 | 488 | 6.6 | 18324 | 3532 | 16.2 | 2123 | 1018 | 32.4 | 30741 | 5123 | 14.3 |
| 1983–84 | 3333 | 84 | 2.5 | 6741 | 493 | 6.8 | 18249 | 3678 | 16.8 | 2274 | 1117 | 32.9 | 30597 | 5372 | 14.9 |
| 1984–85 | 3338 | 88 | 2.6 | 6596 | 500 | 7.0 | 18297 | 3922 | 17.7 | 2421 | 1231 | 33.7 | 30652 | 5741 | 15.8 |
| 1985–86 | 3459 | 95 | 2.7 | 6762 | 543 | 7.4 | 18721 | 4195 | 18.3 | 2478 | 1346 | 35.2 | 31420 | 6179 | 16.4 |
| 1986–87 | 3555 | 104 | 2.8 | 6798 | 576 | 7.8 | 18967 | 4460 | 19.0 | 2605 | 1509 | 36.7 | 31925 | 6649 | 17.2 |
| 1987–88 | 4299 | 125 | 2.8 | 8401 | 737 | 8.1 | 21969 | 5367 | 19.6 | 3049 | 1931 | 38.8 | 37718 | 8160 | 17.8 |
| 1988–89 | 4252 | 137 | 3.1 | 8357 | 765 | 8.4 | 21792 | 5768 | 20.9 | 3089 | 2122 | 40.7 | 37490 | 8792 | 19.0 |
| 1989–90 | 4380 | 159 | 3.5 | 8493 | 841 | 9.0 | 21914 | 6220 | 22.1 | 3311 | 2268 | 40.7 | 38098 | 9488 | 19.9 |
| 1990–91 | 4609 | 197 | 4.1 | 8610 | 914 | 9.6 | 22286 | 6858 | 23.5 | 3474 | 2429 | 41.1 | 38979 | 10398 | 21.1 |

*Source*: UGC Statistics of Education, Universities; USR University Statistics, Students and Staff.
*Note*: From 1987 for Great Britain; 1970 to 1972 only staff paid from general university funds.

*Figure* 5.5 Sex of academic staff in polytechnics



(Table 5.12 and Figure 5.5). Some of these increases were the result of amalgamations with colleges of education, which often had higher proportions of women staff. By 1980, when the numbers of staff were at their highest, the number of women academics had more than doubled to 2,433, or 15 per cent of full-time staff.

In terms of hierarchy (Table 5.13 and Figure 5.6), the proportion of women who were on lecturer grades dropped to 31 per cent by 1980, though this was in line with the diminishing proportion of lecturer grade staff in the sector as a whole, and compares with 14 per cent of male staff at lecturer grade. As this proportion dropped, so did the proportion of women academics on senior grades. There were just 130 women, 5 per cent of all women teachers, at Vice-Principal, Head of Department, Reader or Principal Lecturer level, compared with 27 per cent of men.

Over the next decade, in spite of the decline in staff numbers, women staff made small gains, although they were still vastly outnumbered by their male colleagues (Figure 5.5), and remained under-represented at senior levels by comparison with men (Figure 5.6). By 1990, one in five of full-time staff was female (compared with one in ten in 1971); there were now 2,873 women staff. The proportion of women in senior grades had at last risen; there were now 335 at principal lecturer or above (12 per cent of all women staff). There were four women among the 34 Directors. The proportion of women in the lecturer grade had also risen slightly, to 32 per cent. Again, the position of women in the polytechnics was comparable with that in the universities over this period. There, too, the number and proportion of women staff increased (Figure 5.7) as did the proportion of women in higher grades (Figure 5.8). But they still remained a minority, at 21 per cent of all academic staff (Table 5.14), and under-represented at higher levels – less than 200 of the nearly 5,000 professors in 1990 were women.

The small improvement in the position of women was mirrored by a change for men. Whilst their numbers fell to 11,679 in 1990, a drop of 2,592, the proportion of men at senior levels remained constant – a quarter of men were still at senior management levels, and the proportion at lecturer level had risen to 18 per cent.

It was apparent that women staff in polytechnics were generally younger than their male colleagues, in part reflecting their junior status (Figures 5.9 and 5.10). As the proportion of women increased, the age gap also widened. In 1985 (the earliest year for which data are available), 64 per cent of women were under 45 compared to 50 per cent of men (Table 5.15). By 1990, the figures were 62 and 46 per cent respectively (Figures 5.9 and 5.10).

The new female recruits were more likely than their predecessors to enter science and technology. In 1985 there were only 25 women out of nearly 1,400 graduate teachers in technology. By 1990, there were 41 out of just over 1,200. Most of these women (83 per cent) were under 45, compared with only 55 per cent of the men. In science, the 163 women in 1985 represented 8 per cent of the 2,048 graduate teachers; in 1990, the 236 women represented more than 12 per cent.

*Figure 5.6* Percentage of women academic staff in polytechnics, by grade, 1971–72 to 1990–91

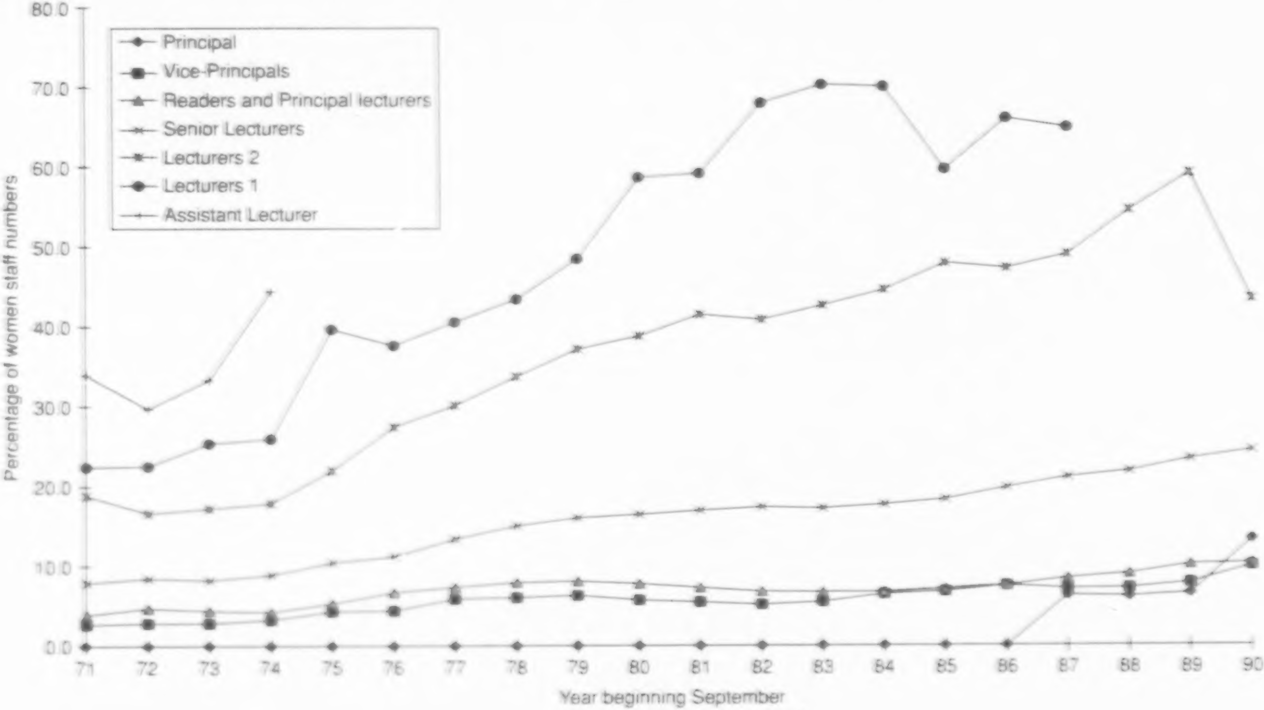


*Figure 5.7* Sex of academic staff in universities, 1972–73 to 1990–91

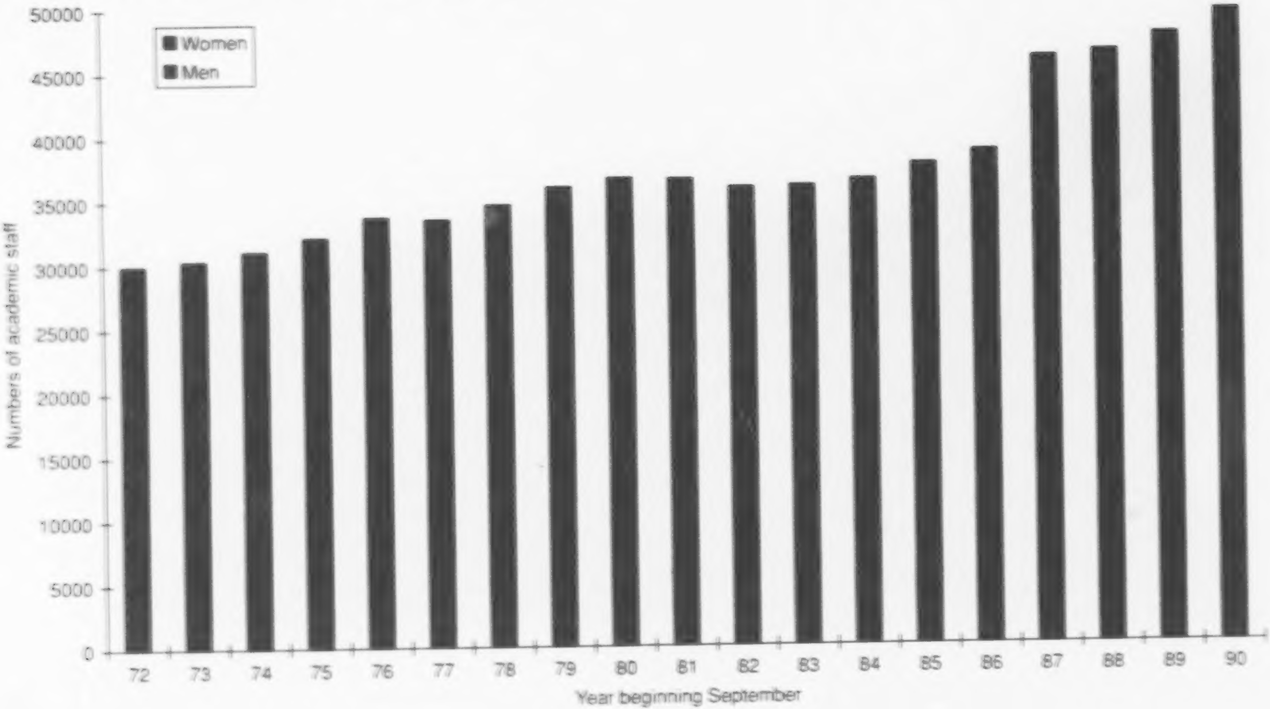


*Figure 5.8* Percentage of women full-time teaching and research staff in universities, by grade, 1972–73 to 1990–91

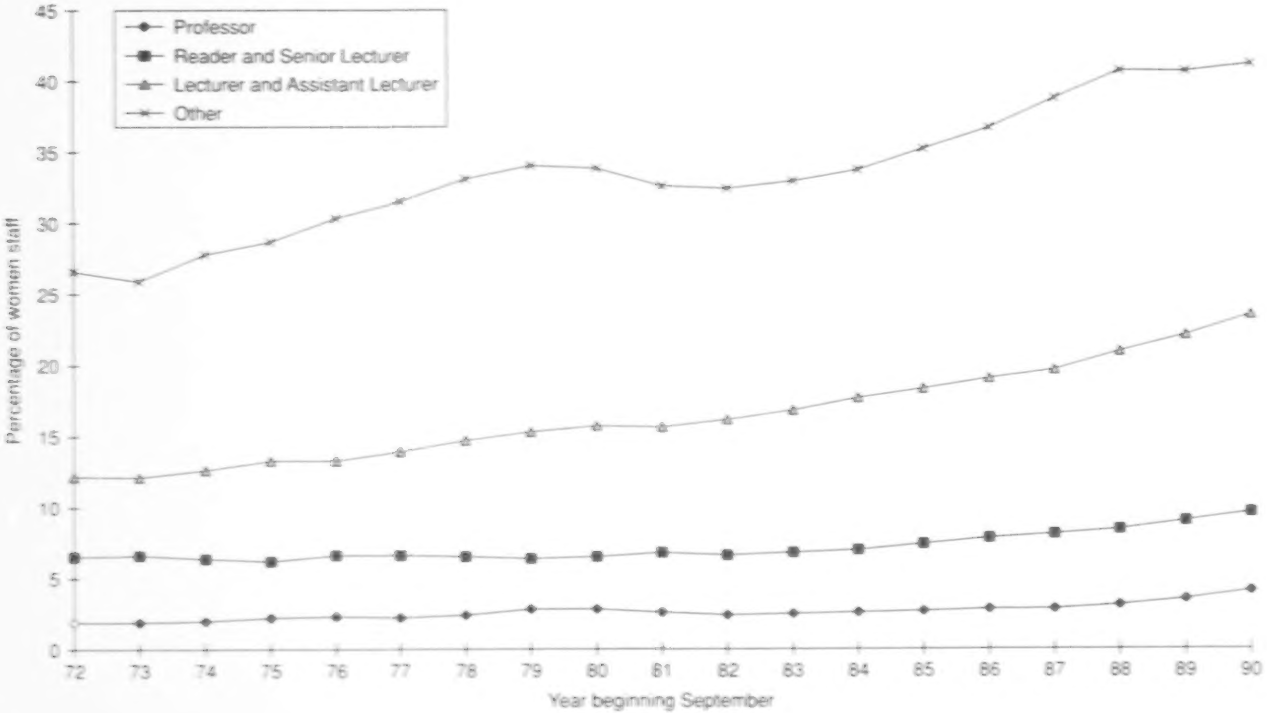


*Figure 5.9* Percentage of total men and women academic staff in polytechnics, by age group, 1985

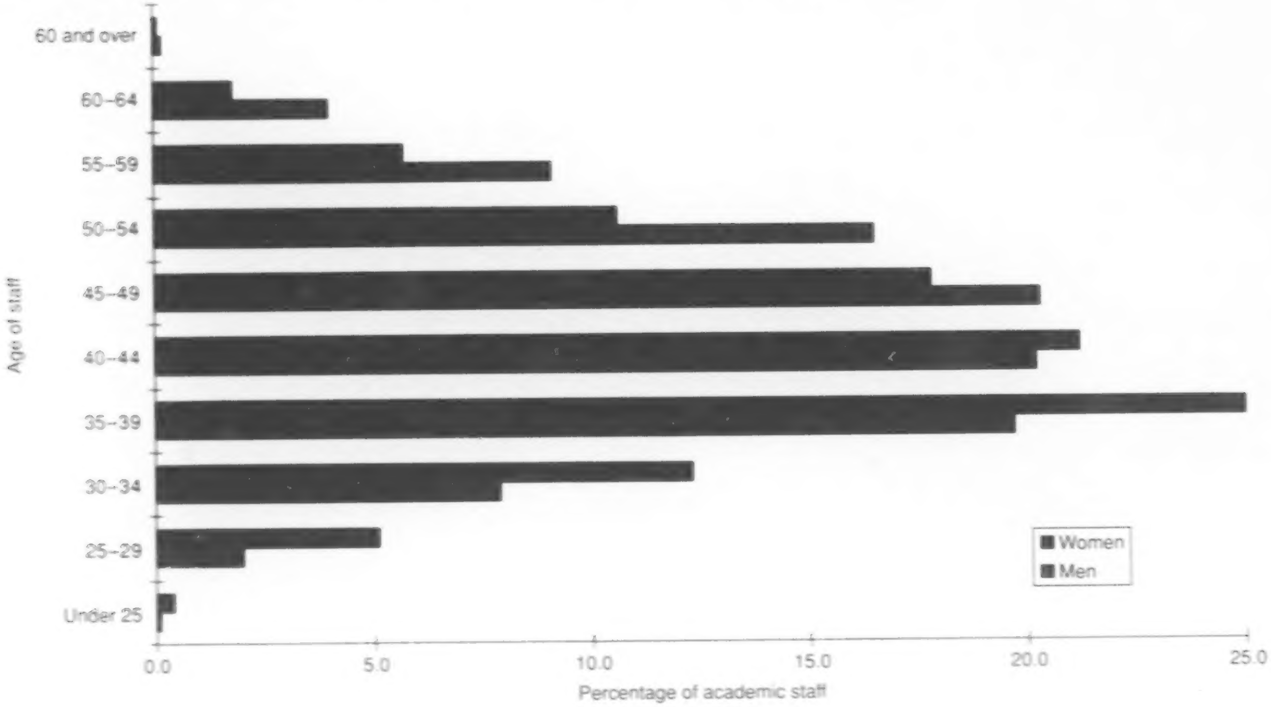


*Figure 5.10* Percentage of men and women academic staff in polytechnics, by age, 1990

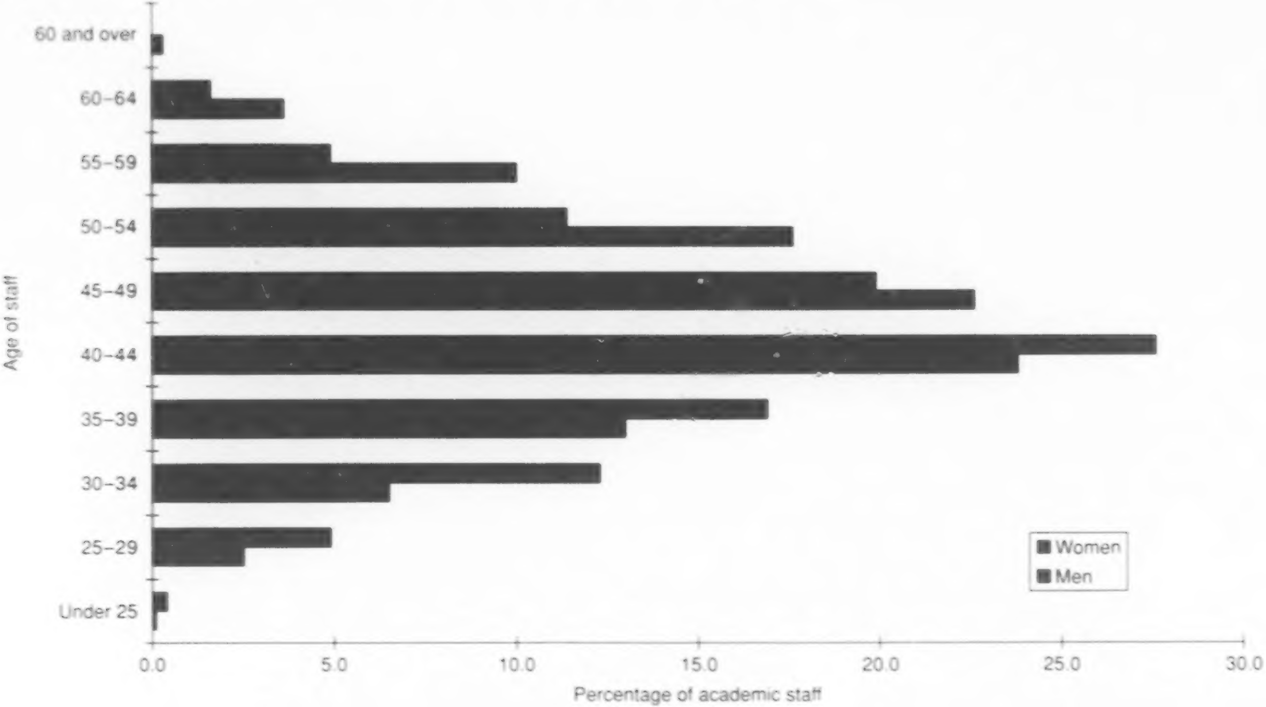


*Table 5.15* Age of full-time teachers in polytechnics, 1985–86 and 1990–91

| | *1985* | | *1990* | | *1985* | | *1990* | |
|---|---|---|---|---|---|---|---|---|
| | *Men* | *% men* | *Men* | *% men* | *Women* | *% women* | *Women* | *% women* |
| Under 25 | 18 | 0.1 | 8 | 0.1 | 10 | 0.4 | 13 | 0.4 |
| 25–29 | 258 | 2.0 | 290 | 2.5 | 120 | 5.1 | 142 | 4.9 |
| 30–34 | 1034 | 7.9 | 764 | 6.5 | 287 | 12.3 | 355 | 12.3 |
| 35–39 | 2593 | 19.7 | 1528 | 13.0 | 584 | 25.0 | 490 | 16.9 |
| 40–44 | 2656 | 20.2 | 2793 | 23.8 | 495 | 21.2 | 798 | 27.6 |
| 45–49 | 2676 | 20.3 | 2646 | 22.6 | 416 | 17.8 | 577 | 19.9 |
| 50–54 | 2175 | 16.5 | 2062 | 17.6 | 248 | 10.6 | 330 | 11.4 |
| 55–59 | 1197 | 9.1 | 1171 | 10.0 | 134 | 5.7 | 143 | 4.9 |
| 60–64 | 521 | 4.0 | 427 | 3.6 | 43 | 1.8 | 45 | 1.6 |
| 65 and over | 23 | 0.2 | 30 | 0.3 | 2 | 0.1 | 0 | 0.0 |

*Source*: Figures supplied by the Department for Education.

While there was an increasing proportion of women among the teaching staff and at senior levels, many of the features of disadvantage of women in other employment appeared to apply also to the polytechnics. Halsey's 1989 survey revealed that a disproportionate number of women teachers were part-time (8 per cent compared to 1 per cent of males) (Halsey, 1992). Women still seemed to be disproportionately represented at lower grades and in part-time work (Halsey, 1992). There was also disquiet about equality of opportunity in recruitment and promotional practices. In 1989, four senior lecturers at Newcastle Polytechnic took Newcastle City Council to an Industrial Tribunal over alleged sex discrimination in promotion. While they did not win, the case raised issues concerning the weighing of male and female qualities in judging management potential (Brown, 1989). The difficulty of combining careers and marriage for women was also evident. Women polytechnic academics were less likely than their male counterparts to have married. In Halsey's 1989 survey, 14 per cent of women had never married, compared to 7 per cent of men. However, compared with university women, of whom 22 per cent had never been married (Halsey, 1992), it would appear that polytechnic women are less likely to find an academic career incompatible with marriage.

## The functions of teaching staff

According to the Secretary of State, the polytechnics were established as basically teaching institutions, with the main role of staff to provide and teach on courses to a range of students. The purpose of any research was to support the teaching function:

> When we say that the Polytechnics will be primarily teaching institutions, of course we do not wish to deny staff opportunities to do research to

> serve the needs of local industry, or to enlarge their knowledge and understanding of their own discipline . . . in terms of the type of degree and the balance between teaching and research . . . we see the Polytechnics as fulfilling a distinctive role from the universities.
>
> (Crosland, 1967)

Administrative Memorandum 8/67 also stated that the main responsibility of the polytechnics would be as teaching institutions, 'but it will be necessary to make the provision for research which is essential to the proper fulfilment of their teaching functions and the maintenance and development of close links with industry'. The Secretary of State hoped that:

> provision will be made for suitably qualified members of the teaching staff to pursue research where it will contribute to the better performance of their teaching duties. . . . He does not, however, envisage that in the ordinary way it will be necessary for members of the academic staff to devote the whole, or most of their time to research.
>
> (DES, 1967)

This philosophy was reflected in the conditions of service of polytechnic teachers. They were covered by the Burnham Committee for all teachers in further education, geared to the needs of the whole sector, and no modification was made for staff in polytechnics. They specified teaching hours per week per grade, allocating only a possible three hours remission for research.

Whitburn *et al.* (1976) confirmed that polytechnic teachers in 1972–73 were working broadly within the pattern that these constraints implied. The survey asked respondents to estimate how long they spent on various activities each week. Overall it appeared that staff spent 34 hours a week on polytechnic work, divided between 15 hours teaching, eight hours preparation for teaching, eight hours of committee work and administrative responsibilities, and three hours for research.

Within this general pattern there was variation depending on level of the member of staff and the pattern of the teaching activity. Senior staff, principal lecturers (12 hours) and Heads of Department (eight hours) spent less time teaching, and considerably less time preparing their teaching – Heads of Department one hour only – than their junior colleagues, who spent 17 hours teaching and nine hours preparing. However, the time for committee and administrative work rose, with Heads of Department spending nearly ten times more hours on this work than Lecturer I staff: 29 hours to three hours. Heads of Department also spent more hours on polytechnic work: 40 hours, to the 30 hours claimed by principal lecturers. This time analysis showed that Heads of Department had not lost all teaching contact with students. The heavy committee and administrative load may be related both to the amount of time spent in preparing for the submission and introduction of new CNAA degree courses and the need to develop new structures to support the development of the new academic institutions (Whitburn *et al.*, 1976).

Fox (1981), surveying the staff in one polytechnic, found they too mainly saw their principal role as teacher. He asked them to indicate their principal role from a choice of teacher, researcher, professional practitioner and manager/administrator. Seventy-five per cent chose teacher. Of the rest, the majority saw themselves as professional practitioners, such as lawyers or accountants, who had acquired a teaching function.

In 1972–73, 59 per cent of all staff were involved in some research (Whitburn *et al.*, 1976). Staff involved with degree courses were more likely to be doing research than those on non-degree work, perhaps not surprising as the CNAA, in its validation of new degree courses, was putting an emphasis on the need for research activity to support degree teaching. It was also apparent that longer serving staff, those with over 10 years in post, were less likely to be researching (48 per cent) than those with less than 10 years in post (64 per cent) This decrease in research activity was also associated with age, with only 36 per cent of staff over 50 compared to 74 per cent of staff under 39 researching.

When Whitburn *et al.* (1976) further analysed the data in their survey it became apparent that those staff who were researching did not spend less time teaching or on administrative duties than their non-researching colleagues, but rather added the research on top of their load, so spending more time on their polytechnic duties than their colleagues, thus not appearing to get the research remission included in the Burnham rules.

The researchers had different reasons for their research: 23 per cent were working towards a higher degree, 44 per cent towards publication, 18 per cent towards both, and 14 per cent for some other reason. A higher proportion of lecturers than Heads of Department were working towards higher degrees, with Heads of Department more interested in publication.

Halsey (1992) also asked polytechnic staff about their workload. The survey showed that staff, in estimating the balance of their week between teaching, administration and research, claimed to have nearly doubled the proportion devoted to research compared to the percentages given in the Whitburn *et al.* study. Halsey's polytechnic respondents claimed 15 per cent of their time was devoted to research; Whitburn *et al.* (1976) reported 9 per cent.

Halsey was primarily interested in research leading to publication. In 1976, 60 per cent of polytechnic staff were researching with a view to publication, and this had risen to 71 per cent in 1989. In 1976, 50 per cent had no publication to their name; in 1989 this had dropped to 27 per cent. They were also more likely to have a number of publications. Whereas in 1976 only 2 per cent had over 20 articles published, this had risen to 10 per cent in 1989 (Halsey, 1992).

Staff views about the importance of research to support teaching had also changed. In 1976, 57 per cent agreed that it was essential; by 1989 this had risen to 73 per cent. Equally, in 1976 only 11 per cent agreed that an academic's first loyalty should be to research in his or her discipline; this had nearly doubled by 1989 to 21 per cent.

*Table 5.16* Polytechnic staff involvement in outside activities

| | *1976* % | *1989* % |
|---|---|---|
| Speaking to seminar or lecturing at university | 25 | 58 |
| Speaking to seminar or lecturing at polytechnic or college | 28 | 38 |
| External examining at another polytechnic/university | 6 | 22 |
| Attending academic or professional conference: UK | 64 | 90 |
| Attending academic or professional conference: abroad | 12 | 27 |
| Holding office associated with academic work | 23 | 33 |
| Serving as editor or member of editorial board of academic journal | 5 | 12 |
| Serving as referee for one or more manuscripts submitted to academic journal | 9 | 27 |
| Serving as referee for one or more grant applications to any grant-giving body | 5 | 14 |

*Source:* Halsey 1992

While the volume of research activity was increasing, so also, as the number of students enrolled on CNAA research degrees increased, the proportion of staff engaged in supervising postgraduate research degrees rose – from 18 per cent in 1976 to 32 per cent with full-time and 68 per cent with part-time students in 1989.

Halsey (1992) also asked staff whether their primary interest lay in teaching or research. His data suggest aspiration for a greater research function. In 1976, 20 per cent of polytechnic respondents indicated a preference for research; by 1989 this had risen to 27 per cent. Halsey asked staff to distinguish between the amount of time they spent on various activities, and the ideal time they would like to spend on each. This clearly shows that staff wished to alter the balance between their roles, reducing the time spent on undergraduate teaching, management and administration, and increasing time on graduate teaching and research. So, by the late 1980s, polytechnic staff were not only wanting to alter the balance between teaching and research to give more time for research, but had already increased the proportion of time spent researching.

An indicator of the changing function of polytechnic staff is their involvement in the wider world, including universities. Halsey's surveys showed that the percentage of polytechnic staff involved in many of these activities had doubled (Table 5.16).

## Staff development

The changes that academic staff faced as the new polytechnics were established were considerable, and they implied a need for staff to develop their concept of teaching in higher education, and skills in developing and

*Table 5.17* Trained academic staff in polytechnics

| | *Trained* | *Not trained* | *% trained* | *Total* |
|---|---|---|---|---|
| 1971–72 | 1995 | 7830 | 20.3 | 9825 |
| 1972–73 | 2139 | 8663 | 19.8 | 10802 |
| 1973–74 | 2402 | 10580 | 18.5 | 12982 |
| 1974–75 | 2447 | 10662 | 18.7 | 13109 |
| 1975–76 | 2447 | 10664 | 21.4 | 13561 |
| 1976–77 | 2897 | 11111 | 24.7 | 14749 |
| 1977–78 | 3638 | 11791 | 26.5 | 16048 |
| 1978–79 | 4257 | 12179 | 26.5 | 16565 |
| 1979–80 | 4386 | 12311 | 26.1 | 16656 |
| 1980–81 | 4345 | 12582 | 24.8 | 16732 |
| 1981–82 | 4150 | 12538 | 23.4 | 16374 |
| 1982–83 | 3836 | 12276 | 22.7 | 15885 |
| 1983–84 | 3609 | 12184 | 22.4 | 15696 |
| 1984–85 | 3512 | 12064 | 21.8 | 15435 |
| 1985–86 | 3371 | 11931 | 22.3 | 15360 |
| 1986–87 | 3429 | 11971 | 22.6 | 15476 |
| 1987–88 | 3505 | 11916 | 22.7 | 15422 |
| 1988–89 | 3506 | 11701 | 23.1 | 15207 |
| 1989–90 | 3180 | 10780 | 22.8 | 13960 |
| 1990–91 | 3444 | 11108 | 23.7 | 14553 |

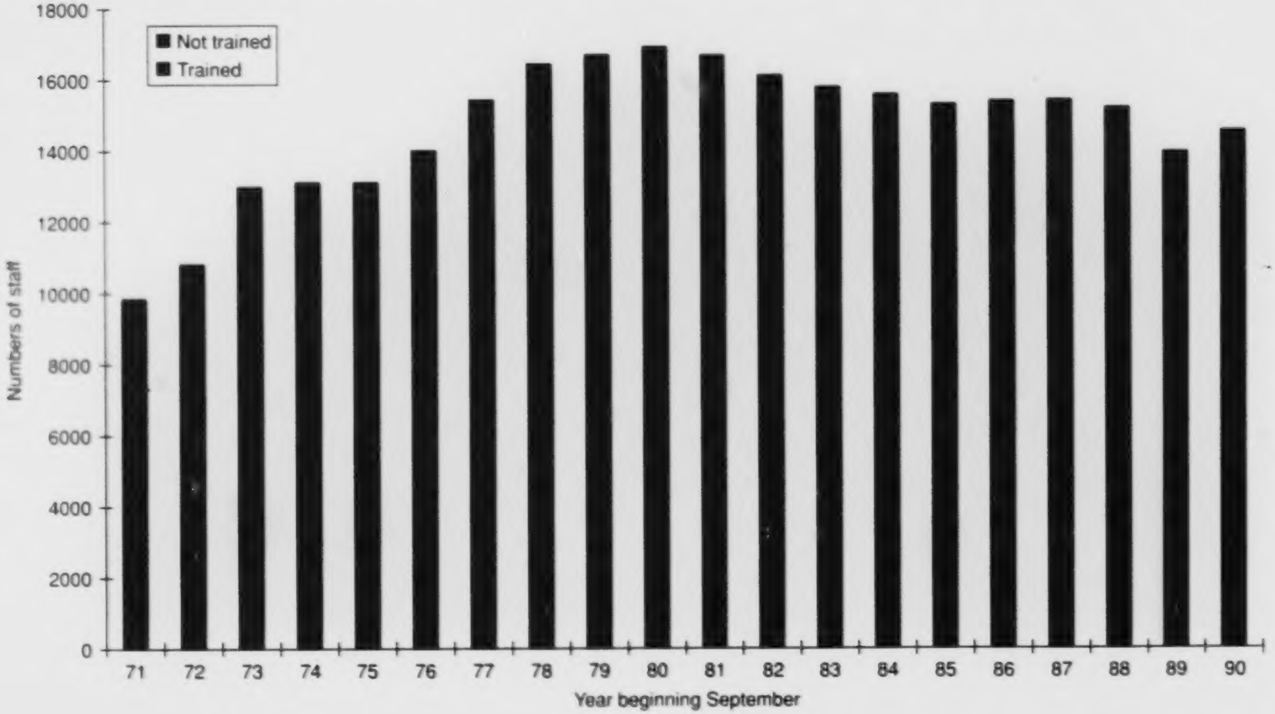
*Source:* DES/DfE Statistics of Education, Teachers.

delivering an increasing range of innovative courses. Amongst the changes was expansion in student numbers, the changing nature of the lecturer's work with new degrees coming on stream, demands for changes in teaching practice from those of the rote learning typical of many technical colleges, and the demands of the CNAA to establish appropriate learning strategies.

The polytechnics were relatively well placed initially, in that a substantial proportion of their staff had formally trained as teachers. In 1971, 20 per cent had been trained (Table 5.17), nearly three times the 7 per cent of university teachers (Robbins, 1963), though the Robbins Report found that 17 per cent had had some 'instruction or guidance' on teaching. In subsequent years, the numbers of trained staff in the polytechnics increased, augmented in particular by staff from amalgamations with colleges of education in the late 1970s (Figure 5.11), and the proportion rose to almost a quarter by 1990.

However, when it came to staff development, the polytechnics started from a low base. Harding (1974), in his investigation into training activities in the polytechnics, found that only four offered any form of staff training prior to 1970. But 17 polytechnics reported teaching methods programmes by 1972–73, and in 1973–74, 22 polytechnics had internal courses for staff. Harding concluded that, by 1974, the majority of polytechnics were concerned with training staff. The level of provision, however, was very different:

*Figure 5.11* Training of academic staff in polytechnics, 1970–71 to 1990–91



ten polytechnics provided fewer than 60 hours intensive teaching methods, whilst Manchester provided 250 hours, and Hatfield 240 hours. Hannaford (1974), described staff development at Kingston Polytechnic, illustrating the position at the time. Whilst the Polytechnic practised staff development, he reported that there was no policy. The practice included induction – expecting all staff to attend a weekly seminar in year one, attendance at conferences, seminars, participation in local and national organizations, sabbaticals, research and consultancy – between 1970 and 1973, 297 papers were published, and 94 staff obtained higher degrees, and encouraging the participation of junior staff on committees.

In 1974 the Standing Conference on Educational Development in Polytechnics was formed. Gradually institutions moved to formulate comprehensive institutional policies on staff development (Greenaway and Harding, 1978), including provision for leave for staff to undertake courses leading to higher qualifications. Cryer (1981), surveying universities and polytechnics, found that the polytechnics had a more professional approach to staff development than the universities, with most developers attached to a special unit for teaching and learning, and over half with a full-time involvement in staff development. Short courses and award-bearing units were developed to meet the needs of staff to work with new educational technologies, and develop a range of teaching and student support skills (Eraut *et al.*, 1980; Earwaker, 1989). In 1989 HMI found that most polytechnics had staff development policies which allowed staff to follow such activities as secondment, study-leave, attendance at conferences, participation on courses, research and consultancy. Frequently Heads of Department were required to keep records of staff development activity, and annual staff development interviews were being introduced. The focus of staff development shifted, too, away from teaching and towards the acquisition of academic qualifications and research skills. In one polytechnic, 52 per cent of staff development activities were devoted to the enhancement of academic or professional qualifications, 20 per cent to research, 16 per cent to professional and industrial updating and 12 per cent to the improvement of teaching skills (HMI, 1989a).

Some indication of the impact of the staff development tradition and emphasis on teaching in the polytechnics can be seen in HMI commentary on the polytechnics (HMI, 1983a). In all areas of work observed, staff were well qualified. The proportion of graduates among engineering lecturers, for example, was high, and non-graduates had Chartered Engineer status. At one polytechnic 52 per cent of engineering staff had higher degrees, and 22 per cent doctorates. A 1984 HMI report following inspection of 13 polytechnic engineering departments found that staff were dedicated, well qualified and industrially experienced, but in a number of departments the decrease in job opportunities had led to a static and ageing staff and a loss of recent first-hand experience (HMI, 1984).

Another commentary in 1989 found that, apart from senior management, most academic staff spent the majority of their time preparing and delivering courses. In most institutions, and on most courses, there was evidence of outstanding teaching; the great majority was at least satisfactory, and only between 10 and 20 per cent of teaching was less than satisfactory, often involving over-dependence on lectures, spoon-feeding students, poor feedback on written work, and assessment methods which were too dependent on memory of factual information. HMI concluded that the general quality of teaching and learning had improved in the last five years (HMI, 1989a).

HMI also found that polytechnic lecturers were generally well qualified for their teaching. Most had appropriate degrees, large numbers had professional qualifications, many had higher degrees, and the majority had suitable industrial, professional or commercial experience, albeit a long time ago. However, even by 1990, only 24 per cent were formally trained as teachers, only 4 percentage points up on the figure of two decades earlier (Table 5.17).

## Pay and conditions of service

The new polytechnics started with salaries and conditions of service inherited from the technical colleges and suited to the range of work generally in further education. Despite the precedents of the past in the colleges of advanced technology, when the salary scales were amended to cope with the changes in the level of work of staff and to make them more comparable with those in universities (Burgess and Pratt, 1970), there were no immediate proposals for change when the polytechnic policy was formulated.

Staff in polytechnics were employed by the local authorities. The negotiations of salaries and conditions of service were separate at this time, with the structure of salaries negotiated through the Burnham Further Education Committee. This structure had barely changed from 1951, and was geared towards work below advanced level. This led to a narrow salary band, with, in the late 1960s, most staff paid between £2000 and £2800. This compared unfavourably with the universities at the time, where the corresponding range was £1400 to £3500 (Robinson, 1968). There was little reward for taking more senior posts, and the recruitment of people of high calibre to provide educational leadership was proving very difficult. Whitburn *et al.*'s (1976) finding that in 1972, only 10 per cent of respondents were attracted by salary to join the polytechnics, may reflect general dissatisfaction with salary levels. The formation of the Association of Polytechnic Teachers (APT) in May 1973, committed to setting up salary negotiating machinery for polytechnic staff separate from the further education system, is also indicative of this dissatisfaction.

Pratt and Burgess (1974) were highly critical of the failure of the government to utilize the Burnham negotiations in the late 1960s to advance the polytechnic policy. They recorded the resistance of the management panel (representing the government and local authorities) to the teachers' panel's proposals to use the salary scales as instruments of policy. The teachers argued that college salaries should be competitive with those in universities, to avoid continuing losses of qualified staff. They were supported in this argument by CNAA. The management argued that because not all the work in the whole sector was comparable with university work there could not be salary scales comparable with university scales. Pratt and Burgess (1974) concluded that it was clear that the management panel was 'trapped in assumption which ran counter to the polytechnic policy. The polytechnics were being asked to do a job which was different from that of universities, yet the very difference was being used as a justification for lower salaries for their staff'. They went on to claim that in effect the Secretary of State was saying to polytechnic teachers that 'the only way they could improve their salaries and prospects was to become as quickly as possible indistinguishable from universities'.

However, by the time this critique was published, help for the policy was at hand. The Houghton Committee, inquiring into teachers pay in general, also covered further education, and reported in 1974. This established that further education salaries, as with other teachers' salaries, had failed to keep up with other sectors in the country. Taking 1965–66 as the base for the salary index (100), further education rates rose to 175.9 by 1974; the comparator salaries index was 208.8 (Houghton, 1974). It recommended increases averaging 16 per cent and this was accepted by the government.

The Committee established another perhaps more important principle. In contrast with the government's position in the 1960s, Houghton established the principle of parity between teachers in polytechnics and university staff: 'teachers doing work broadly equivalent to that in universities should have broadly the same career prospects as university lecturers' (Houghton, 1974). Houghton also recommended the ending of the assistant lecturer grade, and argued that the distinction between lecturer I and lecturer II work was difficult to maintain, as it was becoming increasingly difficult, with the introduction of the DipHE, to distinguish between advanced and non-advanced work. While the recommendation to drop the assistant lecturer grade was implemented, the merging of the lecturer grades did not happen until 1987. Houghton also recommended the introduction of an efficiency bar between lecturer and senior lecturer grades, enabling lecturers mainly engaged in advanced work to progress, thereby giving a clearer career structure. The effects of this change were immediately visible in the reduction of staff in junior grades by 1975, which we saw earlier.

The effect of Houghton was to substantially increase the pay of all polytechnic teaching staff, and to provide a clearer career path. Table 5.18 shows the way in which the salary ranges of the early 1970s were enhanced after the Houghton settlement. The maximum of the senior lecturer grade, for example, changed from under £3000 in 1971 to nearly £5500 by 1975. Tolley (1975) argued that one effect of Houghton could have been that polytechnics now provided better opportunities in salary and career terms than the universities, given the polytechnics' proposed expansion. This was perhaps optimistic. Table 5.19 shows that university salary scales were still

*Table 5.18* Salaries for selected teachers in establishments of further education (£s)

| | *Principal Group 1* | *Principal Group 12/13* | *HOD Grade I* | *HOD Grade VI* | *Principal Lecturer* | *Senior Lecturer* | *Lecturer Grade II* | *Lecturer Grade I* | *Assistant Lecturer* |
|---|---|---|---|---|---|---|---|---|---|
| 1971 | 2760–3330 | 6510–7320 | 2650–2970 | 4160–4600 | 2190–3260 | 2920–3260 | 2195–2875 | 1375–2570 | 1055–2242 |
| 1972 | 3011–3630 | 6996–7869 | 2841–3185 | 4461–4933 | 3421–4339 | 3131–3768 | 2355–3083 | 1500–2687 | 1160–2402 |
| 1973 | 3171–3790 | 7156–8029 | 3001–3345 | 4621–5093 | 3581–4499 | 3291–3928 | 2515–3243 | 1660–2847 | 1360–2604 |
| 1974 | 5523–6033 | 11844–12354 | 4086–4746 | 6831–7599 | 5001–6429 | 4206–5423 | 2670–4476 | 1869–3633 | |
| 1975 | 6540–7122 | 13224–13734 | 4896–5652 | 8037–8913 | 5940–7578 | 5031–6417 | 3279–5493 | 2469–4377 | |
| 1976 | 6540–7122 | 13224–13734 | 5208–5964 | 8349–8913 | 6252–7890 | 5343–6729 | 3591–5805 | 2781–4689 | |
| 1977 | | | | | No pay award | | | | |
| 1978 | 7707–8343 | 15030–15591 | 5904–6732 | 9345–10305 | 7047–8844 | 6051–7572 | 4101–6558 | 3192–5334 | |
| 1979 | 8400–9093 | 16383–16995 | 6435–7338 | 10185–11232 | 7680–9639 | 6597–8253 | 4470–7149 | 3480–5988 | |
| 1980 | 11496–12444 | 23244–24111 | 8733–9957 | 13995–15432 | 10509–13245 | 8952–11295 | 6012–9702 | 4683–8055 | |
| 1981 | 12357–13377 | 24987–25920 | 9387–10704 | 15045–16590 | 11298–14238 | 9624–12141 | 6462–10431 | 5034–8658 | |
| 1982 | 13044–14115 | 26304–27285 | 9924–11307 | 15867–17490 | 11931–15018 | 10173–12816 | 6855–11022 | 5355–9267 | |
| 1983 | 13683–14802 | 27540–28563 | 10422–11868 | 16632–18327 | 12519–15744 | 10683–13443 | 7215–11568 | 5649–9735 | |
| 1984 | 14313–15483 | 28806–29877 | 10902–12414 | 17397–19170 | 13095–16467 | 11175–14061 | 7548–12099 | 5910–10512 | |
| 1985 | | 30247–31370 | | 18267–20129 | 13749–17289 | 11733–14763 | 7926–12705 | 6207–11037 | |
| 1986 | 16158–17478 | 32517–33726 | 12306–14016 | 19638–21639 | 14784–18588 | 12615–15873 | 8595–13656 | 6843–11865 | |
| 1987 | 18696–20223 | 37623–39021 | 14238–16218 | 22722–25035 | 17499–21501 | 14001–17499 | 8001–14499 | | |
| 1988 | 19818–21435 | 39879–41361 | 15093–17190 | 24084–26534 | 18549–22791 | 14841–18549 | 8481–15369 | | |
| 1989 | | | 16800–18999 | 26250–28851 | 19941–24501 | 15954–20511 | 9117–16521 | | |
| 1990 | 23466–28926 | 41478–49662 | 18336–42132 | | | 18285–22068 | 10089–18285 | | |
| 1991 | 24897–30690 | 44007–52692 | 19455–44703 | | | 19401–22077 | 10704–19401 | | |
| 1992 | | | 20292–46626 | | | 19077–25206 | 10902–20439 | | |

*Source*: Information supplied by NATFHE.
*Note*: The salary shown for each year is that effective on 1 September. Management spine introduced in 1988/89 for PL and HOD.

*Table 5.19* Salaries of university academic staff on non-clinical rates of pay (£s)

| | *Professor* | *Reader and Senior Lecturer* | *Lecturer and Assistant Lecturer* |
|---|---|---|---|
| 1972 | 5376–6975 | 4143–5376 | 1764–4458 |
| 1973 | 5825–8500 | 4368–5496 | 1929–4548 |
| 1974 | 6105–9104 | 4707–5976 | 2118–4896 |
| 1975 | 7897–11163 | 6234–7742 | 3174–6446 |
| 1976 | 8106–11372 | 6443–7951 | 3333–6655 |
| 1977 | 8900–11939 | 7074–8730 | 3660–7308 |
| 1978 | 10293–13807 | 8182–10097 | 4232–8452 |
| 1979 | 12098–16209 | 9568–11853 | 4766–9891 |
| | Min : Average | | |
| 1980 | 15274 : 17939 | 11947–14947 | 5890–12385 |
| 1981 | 15730 : 18480 | 12305–15410 | 6070–12860 |
| 1982 | 16515 : 19405 | 12920–16180 | 6375–13505 |
| 1983 | | | –14125 |
| 1984 | | | –14925 |
| 1985 | 19010 : 22340 | 16480–18625 | 7530–15700 |
| 1986 | 22050 : 26585 | 19115–23355 | 8735–18210 |
| 1987 | | As 1986 | |
| 1988 | 23380 : 30552 | 20920–24765 | 9260–19310 |
| 1989 | 24783–30552 | 21489–26253 | 9816–20469 |
| 1990 | 27013 | 23423–26616 | 12086–22311 |

*Source*: Up to 1979 UGC Statisics of Education, Universities. From 1980 AUT Bulletins, information supplied by AUT.

generally higher for comparable grades than those in polytechnics; the maximum salary for a university lecturer in 1975 was nearly £6400, compared to the maximum for a senior lecturer of £5500.

Houghton represented a false dawn. Ensuing years saw the beginnings of financial constraint and a changing industrial relations climate. Whilst the 1970s were the age of expansion (Pratt, 1988) in higher education, the 1980s were the age of constraint. Staff were as affected by this as students and budgets. The 1980s were generally 'a difficult and testing period in employer and academic staff relations in British higher education' (Farnham, 1991). Financial constraint limited both the numbers and the salaries of staff. The industrial relations climate was changing as part of the government's wider policy to limit the powers of trade unions. There were continuing attempts to modify conditions of service. In 1975 the National Joint Council for further education teachers employed in England and Wales (NJC) was established to provide for the negotiation of terms and conditions of service. Until 1980, however, conditions of service were negotiated quite separately from salaries in negotiations between the teacher unions and the Council of Local Education Authorities (CLEA) (Locke *et al.*, 1988). In 1980–81 the statutory and negotiated conditions of service were incorporated in a single authoritative document known as the 'Silver Book'. The Silver Book contained binding collective agreements on most issues and some recommendations for incorporation into local agreements. In 1987, following the Teachers' Pay and Conditions of Service Act 1987, which enabled the Secretary of State to impose salaries and conditions of service on school teachers, Burnham was abolished and the NJC took over the negotiation of both pay and conditions of service.

Increases in efficiency and productivity were the policy aim of the 1980s. 'In both university and non-university sectors real wages for academic staff were squeezed, and, at the same time, teacher productivity was raised and job security weakened, without compensatory pay adjustments from the employers' (Farnham, 1991). On the other hand there were problems of attracting and retaining staff in some disciplines.

Farnham (1985) recorded many of these changes. They particularly affected the polytechnics. For example, he reported that 'there appear to have been greater net and relative losses of full time academic staff in the polytechnics than in the universities'. Student : staff ratios increased (as we saw earlier); NAB anticipated SSRs of 12 : 1 within a few years involving increases in teacher productivity of more than 20 per cent (NAB, 1984). In pursuit of efficiency, the Audit Commission for Local Authorities in England and Wales recommended tightening the conditions of work of academic staff in the polytechnics and further education colleges by, *inter alia*, ensuring that staff taught for the maximum contact hours, and reducing remission from contact. Staff were increasingly subjected to a 'managerialist' approach in the polytechnics as elsewhere, with the DES arguing that their 'outputs' needed to be subject to scrutiny as well as the inputs of resources in terms of salaries (Farnham, 1985).

Farnham (1985) recorded the problems for staff in the polytechnics arising from continuing disparity in the salary scales in the 1980s. There was a 'promotion blockage' in the public sector, because of the restriction of 25 per cent on the ratio of principal lecturer posts to total staff (compared with the equivalent limit of 40 per cent for senior lecturers in universities). The public sector union NATFHE also argued that salary scales were inferior, especially at senior and principal lecturer levels, though the scales themselves were closer than previously (Tables 5.18 and 5.19). By 1980, for example, the maxima of these two scales in polytechnics were £11,295 and £13,245; those of the corresponding university lecturer and senior lecturer scales were £12,385 and £14,947.

The first major financial cut in the early 1980s was imposed by the government when it 'capped' the Advanced Further Education Pool in 1979. Subsequent years saw further constraints and the establishment of the National Advisory Body on Local Authority Higher Education (NAB) in 1982 (see Chapter 7). In addition to constrained salaries and conditions of staff, negotiated nationally, individual polytechnics had to cope with the implications of constraints on their own budgets. The polytechnics generally responded to these constraints at first by reducing non-staffing heads,

*Table 5.20* Premature retirement and voluntary redundancy at North East London Polytechnic

| | *AT and T* | *Academic* |
|---|---|---|
| 1981 | 0 | 3 |
| 1982 | 38 | 20 |
| 1983 | 54 | 13 |
| 1984 | 23 | 84 |
| 1985 | 37 | 20 |
| 1986 | 30 | 28 |
| 1987 | 6 | 19 |
| 1988 | 9 | 41 |
| 1989 | 12 | 43 |
| 1990 | 1 | 3 |
| 1991 | 2 | 8 |
| 1992 | 6 | 17 |
| 1993 | 45 | 46 |

*Source:* University of East London Personnel Department.

but they were sooner or later forced to look at savings from staffing establishments. In 1982, LEAs were given discretion to offer enhanced redundancy payments to teachers in advanced further education for a limited period. Teachers over 50 who were declared redundant could qualify for immediate payment of accrued superannuation benefits with enhancement of the lump sum and annual pension. LEAs were also enabled to offer, between 1982 and 1985, improved redundancy terms to staff aged between 41 and 49.

The first announcements of proposed redundancies were made in 1980, though they were not all implemented, North East London Polytechnic declaring 62, Kingston 13, Newcastle seven and Huddersfield 26 (Bocock, 1980). While most reductions were to be secured through early retirement and voluntary redundancy schemes, the spectre of compulsory redundancies remained in the background. Throughout the 1980s, numerous staff took advantage of the opportunity to leave employment in the sector. Figures from North East London Polytechnic show the impact of changing patterns of constraint (Table 5.20). Over 340 academic and 281 non-academic staff took premature retirement or voluntary redundancy between 1981 and 1993, with over 100 leaving in 1984 alone.

At the same time as these events were afflicting staff in polytechnics, their grievances about salary levels continued. By 1986, the gap between the scales in polytechnics and universities had increased again. The maxima for polytechnic senior and principal lecturers were £15,873 and £18,588; for the comparable university lecturers and senior lecturers, they were £18,210 and £23,355.

All of these changes had an impact on the morale of staff in polytechnics. In 1989, Halsey (1992) found, of polytechnic staff remaining, 39 per cent had seriously considered leaving academic life, and another 33 per cent had considered leaving but not seriously. Ninety-three per cent of staff felt that salaries were now too low to attract and hold staff of the necessary calibre, and 90 per cent felt under-valued, and that public respect for academic staff had declined over the past decade.

In 1988, a major challenge to the structure of pay and conditions for polytechnic staff resulted from the Education Reform Act, which removed polytechnics from local authority control and established them as separate corporate entities. This changed the legal employer of staff from the local authorities to the new corporate bodies, making governing bodies legally responsible for all personnel matters such as appointments, suspensions, discipline and dismissal from 1 April 1989 (Farnham, 1988). The terms and conditions of employment for senior staff were now to be determined by Boards of Governors; the result of this was that, very soon after incorporation, polytechnic directorates were awarded large pay rises, with widespread provision of cars, private health care, medical insurance cover and health screening (Farnham, 1991).

For all remaining categories of staff, collective bargaining at national level was to be conducted through the newly established Polytechnics and Colleges Employers Forum, although there were elements in government and on the employers' side who would have preferred a system of bargaining at institutional level. The Lecturers' Common Interest Group sought to settle salary scales for staff whose agreement with their former employers had ended on 31 March 1989. The employers tabled a new contract, radically altering conditions of employment, which the teacher unions claimed increased the required hours of lecturers by 25 per cent and the number of working weeks in a year by 20 per cent. The bitterness of the ensuing dispute led lecturing staff to take industrial action to a level not previously seen. Following action in individual colleges at Birmingham and Coventry, where posts were advertised under the new contract with no pay offer on the table, and the controversy over contracts continuing, lecturers first agreed to work to contract, then, in a further escalation in autumn 1989, to an examination boycott. Finally, an agreement was reached on pay, and a working party was established to agree details of the new contracts. This working party was unable to come to final agreement, and the Chair issued his own report. Meanwhile the next pay round was turning acrimonious, and industrial action had started with a half-day strike. The mood of staff was becoming increasingly bitter, and distrustful of their employers; now the polytechnics themselves (Farnham, 1991). Agreement was finally reached on a new pay scale linked to new contracts and changed conditions of service in January 1991, with an agreement that all staff would transfer to the new contracts by 31 August 1992.

## Non-academic staff

Few could deny the importance of the administrative, technical and other supporting non-academic staff in polytechnics. It was they who facilitated the academic activities, administering the enrolment of students, allocation of resources and the maintenance of the buildings. They may at times have been regarded as a hindrance, as is often the lot of the administrator, enforcing the myriad rules of the organization. But it was they who made it work. Corporately, too, they had an influence on the development of polytechnics, through the Association of Polytechnic Administrators (APA). Academics were fulsome in their dislike of administration when they had to do it. Halsey (1992) found that polytechnic staff estimated they spent 28 per cent of their time on this task, but saw the ideal as 16 per cent.

Nearly half of the staff in the polytechnics were non-academic, but they may as well not have existed so far as historical records are concerned, and this study cannot offer as comprehensive account of these staff as it can of academic staff. Part of the reason for this is that they were often not seen as a separate group within the institution, so much as they were viewed as part of the local authority's staff. They were on nationally agreed grades and salary scales and could move anywhere within local government, not just the polytechnics or even the education sector, as was mainly the case with academic staff. This in turn arose from their different treatment in the articles of government of most polytechnics. The local authority often retained a greater say in the grading and allocation of non-teaching staff than over the academic staff. Separate records were thus less likely to be kept. But these bureaucratic and administrative arrangements simply mean that, in the end, the administrative staff were implicitly taken to be less important than the academic staff, thus making clear that the emphasis in the notion of the 'comprehensive academic community' lay on the second word. The community was not that comprehensive.

All this is the more odd since, as we shall see in Chapter 8, non-academic staff had a greater place in the governance of polytechnics than their university counterparts. The importance of the administration and non-academic support in the polytechnics was not formally recognized at the inception of the polytechnic policy; neither the 1966 White Paper nor the 1967 Notes of Guidance on the designation of polytechnics explicitly mentioned them. But in most polytechnics they had representation on academic boards and governing bodies. There were national seminars recognizing the need for a chief administrative officer of high status, preferably at level of deputy or assistant director to be appointed in each polytechnic (FESC, 1969). It was also recognized that the larger polytechnics would need a 'binary' structure of administration, with the functions of chief administrative officer split between academic registrar and administrative registrar. The polytechnics were not just to be academically independent entities: they were to have substantial responsibilities for running their own affairs as the provisions of the articles of government made clear, and they needed an adminstration and other support staff to do this.

The first national data for the non-academic staff of the polytechnics date from the 1980s. These show that for 22 English polytechnics (excluding those in Inner London), there were more non-academic staff than academics

*Table 5.21* Full-time equivalent numbers of staff at 22 polytechnics

| | *Academic* | *Professional and Support* | *Service Staff* | *Premises* | *Drivers* | *Catering* | *Residence* | *Total* |
|---|---|---|---|---|---|---|---|---|
| 1983–84 | 12342 | 6705 | 2619 | 3387 | 70 | 1393 | 915 | 27431 |
| 1984–85 | 12371 | 6460 | 2585 | 3297 | 67 | 1533 | 822 | 27135 |
| 1985–86 | 12338 | 6367 | 2476 | 2990 | 65 | 1393 | 872 | 26501 |
| 1986–87 | 12364 | 6578 | 2555 | 3381 | 62 | 1223 | 1014 | 27177 |
| 1987–88 | 12433 | 6747 | 2675 | 2980 | 66 | 1168 | 914 | 26983 |

*Source*: Polytechnic Finance Officers Group, Polytechnic Expenditure (Annual).
*Note*: Based on 22 polytechnics (those with complete data for the time period).

*Table 5.22* Non-academic staff (FTEs) in English polytechnics: 1990–91 and 1991–92

| *Administrative and support staff* | *1990–91* | *1991–92* |
|---|---|---|
| Demonstrators, technicians and support staff | 5210.3 | 4711.8 |
| Other staff in academic departments | 1745.8 | 2759.8 |
| Academic support services: libraries | 2131.6 | 2263.8 |
| Academic support services: computers | 1202.3 | 1290.5 |
| Other support services | 1625.4 | 1572.8 |
| Administration and central services | 5258.1 | 5154.6 |
| Total | 17173.4 | 17753.3 |
| *Other staff* | | |
| Premises: caretaking and cleaning | 3020.0 | 2997.3 |
| Premises: building and maintenance | 819.4 | 991.0 |
| Premises other | 596.0 | 456.1 |
| Residences | 1226.4 | 1153.2 |
| Catering | 1396.9 | 1573.1 |
| Other staff | 384.4 | 123.5 |

*Source*: PCFC, 1992; HEFCE, *c.* 1993 Student : Staff ratios in Polytechnics and Colleges, 1990–91, 1991–92.

(Table 5.21). It is unlikely that this pattern varied a great deal over the period of the polytechnics' existence. Non-academic staff were, however, cheaper. A study at Coventry Polytechnic in 1984 showed that average unit costs of academic staff about four times those of non-academic staff (Coventry City Council, 1984). Table 5.22 shows that in the 1990s, nearly half of the non-academic staff in the polytechnics were 'professional and support', carrying out administrative, clerical and secretarial functions. A substantial number were concerned with premises. This differential in costs is reflected in Table 5.23, which shows that spending on non-academic staff accounted for only just over a quarter of salary costs in 1972–73. The table also shows,

*Table 5.23* **Expenditure on salaries in polytechnics**

| | *Teaching staff* | *% staff expenditure* | *Other staff* | *% staff expenditure* | *Other expenditure* | *% staff expenditure* | *Total staff* |
|---|---|---|---|---|---|---|---|
| 1971–72 | 42707 | 73.8 | 15059 | 26.0 | 135 | 0.2 | 57901 |
| 1972–73 | 51391 | 72.5 | 19189 | 27.1 | 293 | 0.4 | 70873 |
| 1973–74 | 57575 | 71.3 | 22979 | 28.5 | 197 | 0.2 | 80751 |
| 1974–75 | 81280 | 69.9 | 34881 | 30.0 | 146 | 0.1 | 116307 |
| 1975–76 | 109387 | 70.3 | 45917 | 29.5 | 274 | 0.2 | 155578 |
| 1976–77 | 124703 | 68.7 | 56567 | 31.1 | 331 | 0.2 | 181601 |
| 1977–78 | 137285 | 67.9 | 64357 | 31.8 | 603 | 0.3 | 202245 |
| 1978–79 | 153926 | 69.2 | 67442 | 30.3 | 1074 | 0.5 | 222442 |
| 1979–80 | 174988 | 67.9 | 81002 | 31.4 | 1789 | 0.7 | 257779 |
| 1980–81 | 226109 | 69.6 | 96424 | 29.7 | 2517 | 0.8 | 325050 |
| 1981–82 | 242741 | 68.6 | 105984 | 30.0 | 5038 | 1.4 | 353763 |
| 1982–83 | 255013 | 67.4 | 114534 | 30.3 | 8734 | 2.3 | 378281 |
| 1983–84 | 266628 | 67.1 | 118963 | 29.9 | 11704 | 2.9 | 397295 |
| 1984–85 | 274182 | 66.2 | 126912 | 30.7 | 12773 | 3.1 | 413867 |
| 1985–86 | 286840 | 66.0 | 132841 | 30.6 | 14773 | 3.4 | 434454 |
| 1986–87 | 309669 | 65.8 | 161109 | 34.2 | | | 470778 |
| 1987–88 | 336179 | 65.8 | 174390 | 34.2 | | | 510569 |

*Source*: DES Statistics of Education, Finance and Awards.
*Note*: From 1981 England only.

however, the growing importance of these staff, as their share of costs increased to over a third of the total by the late 1980s.

At the inception of the polytechnics the main difficulties arose from the lack of power of the polytechnic in staffing matters. To all intents and purposes, the non-academic staff were employed by the local authority, and happened to be working in the polytechnic. Polytechnic directors found that they could not even regrade their secretaries without local authority permission; as such decisions had repercussions for the grading structures of the entire local authority, this was often withheld (Robinson, 1968). Attempts at structural regrading, acceptable to governors, would be blocked by the LEA. This close relationship between local authority and polytechnic staff, with the same staff union representing both polytechnic and local authority staff, fettered the polytechnics' freedom to manoeuvre until finally resolved by incorporation.

There were differences, too, between the polytechnics and the universities, particularly at senior levels. There was an effective senior administrative career structure in the universities, with staff such as registrars and librarians (who eventually became called 'academic-related') recruited as graduates on pay scales similar (though not always equal) to academics. In the polytechnics there were fewer such posts, partly because some of the functions were carried out by local authorities. The university teachers' union represented senior university administrative staff in pay bargaining; in the polytechnics the teachers' union NATFHE was only for academics. For staff on clerical and technical grades, the differences were, perhaps, fewer. Pay and conditions were similar and the staffs were represented by the same unions (mainly NALGO and NUPE for clerical and technical staff, and TGWU and GMB for manual staff). Pay scales for clerical staff in July 1983, for example, ran from £2,976 to £15,357 in polytechnics, and from £3,094 to £15,460 in universities, still showing small, but irritating preferences. Interestingly, too, the APA (though not a trade union) was female dominated, unlike its university counterpart.

As the polytechnics grew, and as the demands for management information increased, so services become more professional. This was reflected by an upgrading of senior administrative posts over time, and an increase in their number. There was a general drift upwards of staff on the grading scales. With incorporation in 1989, the responsibilities of the polytechnics in terms of personnel and finance increased dramatically, and the heads of these functions were usually raised to Directorate level. In terms of the statistics, these senior functional managers no longer appear among the non-academic headcount.

As with academic staff, non-academic staff suffered when economic stringency became the reality. Overall numbers are not available, as nobody collected and collated these in the way the DES did for academic staff. The example of North East London Polytechnic shows that in 1974 there were 610 administrative, clerical and technical posts. By 1980 this had risen to 728, compared to 766 academic staff (NELP, 1982). In the 1980s, numbers declined, so that in March 1987 there were only 386.24 staff actually in post. Incorporation saw the figures beginning to rise, until in 1992 there were 469. The falling numbers in the 1980s reflect, as with academics, staff taking advantage of voluntary redundancy and early retirement packages. As the numbers rose into the 1990s, a number of these returned, but with short-term contracts. Table 5.20 shows the way in which non-academic staff were affected by premature retirement and voluntary severance schemes at this Polytechnic.

The effect of the push by government to increase funding of higher education from other sources can be seen in the growing numbers of non-teaching staff who were externally funded. At NELP, for example, only three of the non-academic staff were externally funded in 1986; by 1991, 27.28 posts were so funded.

The rapid expansion of information technology in the 1980s also affected the nature of administrative and clerical jobs. The numbers on the lowest clerical grade, C2, dropped as the personal computer reduced the need for typists. The role of library staff expanded with the growth of computerized information technology.

The incorporation of the polytechnics in some ways affected non-academic staff more than academics. A host of new posts had to be created to fill functions previously undertaken by the local authority, notably in personnel, finance and premises management. In 1991, PCFC figures showed that the nearly 28,000 non-academic staff represented 55 per cent of all polytechnic staff. Though they accounted for only 37 per cent of the pay bill, this was an improvement on the 1984 relativities we saw earlier (Coventry City Council, 1984), and reflected the growth of senior administrative and managerial posts (CVCP and CDP, 1991).

## Conclusions

The staff of polytechnics faced a stiff challenge when they were created to fulfil the ambitions of the policy to forge a new and different sector of higher education through expansion, educational innovation and economy. Few of the demands that this placed on them were recognized in the early policy statements, and there were views that some were inadequate for the task. Subsequent policy did little to help. Polytechnic staff received inferior pay and suffered worse conditions of employment than their university counterparts for virtually the whole existence of the polytechnics, and the differences were taken with them into the new unified system of higher education in 1992.

At first, the circumstances were relatively favourable. Expansion provided opportunities for new young staff and salary levels were significantly improved following the Houghton Report. But with financial constraint in the 1980s, the number of jobs declined and many staff left, adding age blockages to structural, promotion blockages. Conditions of work worsened yet, remarkably, the staff increased productivity and retained their belief in the quality of their work and students. It was a stoic, and generally unheralded, performance.

The development of the polytechnics and their changing circumstances meant that their staffs changed considerably. Initially, some staff from constituent colleges were excluded from the designated institutions; gradually, new staff with different aspirations replaced the old. They were more academically educated, and more inclined to research than their predecessors. More were women, though men retained their over-representation at higher grades. The staff in polytechnics increasingly resembled those in universities, though differences in qualification and function remained.

When the polytechnics acquired independence from local authorities, there were further changes. The managerial style of the new institutions affected their pay and conditions of work. New cadres of managers, both academic and administrative, appeared.

Polytechnic staff entered the university era under conditions quite different from those at the start of the polytechnic era. Farnham, in his assessment of this period, perceives a shift from a 'best practice' style of employee relations to a more assertive, private sector approach (Farnham, 1991). This was matched by an increasing managerialist culture (Middlehurst and Elton, 1992), with the Head of Department increasingly seen as a management, rather than academic, post. The growth of performance indicators (McElwee, 1992) increasingly put pressure on staff to be seen to perform;

appraisal systems were introduced. Whilst some of these features affected the existing universities, the pay and conditions of university teachers were still determined differently from those in polytechnics and remained so after 'unification' of the sectors. Not for the polytechnics was the assimilation to university salary scales that was granted to staff in the colleges of advanced technology in the late 1960s, and which benefited staff by an average salary increase of 20 per cent (Burgess and Pratt, 1970). Academic staff in the polytechnics entered the university era with pay and conditions curiously different from those in the traditional universities. The lessons of the 1970s remained unheeded. For both academic and non-academic staff, morale was fragile and the outlook unpropitious.

# 6

# From Academic Tutelage to Quality Assurance

When the polytechnics were established in the 1960s and 1970s, they had one crucial advantage over their predecessor institutions: they could create and run their own courses leading to degrees and, indeed, doctorates. As 'comprehensive academic communities', they were expected to offer a range of courses also at sub-degree level, but history had shown that their academic credibility was dependent on degrees. Hitherto, public sector institutions had been subordinate to the universities to offer degrees. Even the colleges of advanced technology, although able to offer qualifications acknowledged to be of degree level, were unable to call them degrees, and had instead to make do with the title Diploma in Technology.

The mechanism available to the polytechnics was that of the Council for National Academic Awards, which had been established in 1964 with the function of validating courses and making awards comparable in standard to those in universities to non-university institutions in the UK. The establishment of the CNAA, ironically, derived from a recommendation of the Robbins Committee, though Lord Robbins subsequently (and from his point of view with some justification) regarded its use as a 'perversion'. At the time of the designation of the polytechnics, degree level courses constituted only a minority of their work. There was a huge range of other qualifications historically controlled by a variety of examining bodies, each with different mechanisms for academic control. As the polytechnics came to concentrate on degree level work through CNAA, the nature of academic control changed, until they were finally granted power to award their own degrees. This chapter traces the development of these academic control mechanisms and their significance for the polytechnic policy.

## Qualifications

There is surprisingly little in the many books about the aims and purposes of higher education about what, in practice, is a major function of most institutions – the awarding of qualifications. Newman, for example, wrote of the university in terms of a liberal education which 'makes . . . the gentleman' rather than in terms of gaining a qualification (cited in Jaspers, 1965). Jaspers described the university as 'a community of scholars and students engaged in the task of seeking truth'. His text took for granted the capacity of the university to establish the standards of the community and its scholarship, though it did discuss the need for selection and examination.

Once the issue of standards and qualifications is addressed, a host of issues follows. Who is to establish the standards? How are they to be enforced? How are courses to be structured? What qualifications are appropriate for what achievements? Are there different levels of courses? What should be the content of courses, and who should decide that?

At the time of the establishment of the polytechnics, the division between the two main traditions in British higher education was, broadly, reflected in the arrangements made in answer to these questions. In the autonomous tradition, the universities were substantially free to create their own courses and syllabuses, to examine their own students and to award their own qualifications. The university senate was the principal academic body, responsible for academic policy and teaching, examinations and discipline. Staff and departments wishing to create or amend courses generally do so without having to meet formal requirements of bodies outside the university. (There were exceptions to this in subjects where professional bodies control admission to particular professions, though in the end the university still had the power to create courses and award degrees in these subjects, whether or not the professional body chose to recognize them.)

Institutions, like the putative polytechnics, in the service tradition did not, historically, have these powers. They usually had to teach to syllabuses created by external bodies, and their students were often examined by such bodies for their qualifications. There was a panoply of bodies and different arrangements for courses at different levels and in diverse subject areas. When they were designated, many of the polytechnics were dependent upon these external bodies.

## *Examining bodies*

Many college courses, when they led to examinations and qualifications, did so for college certificates and diplomas. While these qualifications were often of recognized quality locally, they did not necessarily have a national currency. From very early in the history of technical education, examining bodies were founded which offered a national framework for qualifications. Typically they had representation of colleges, as well as other educational institutions and professions. There was a large number of such bodies and many of them are still major examining bodies for the further education sector. The City and Guilds of London Institute (CGLI), for example, whose courses became a mainstay of the education of many technicians and are still widely available, was established in 1880. In the 1950s, over 80,000 candidates entered its examinations.

## *Professional bodies*

Another examining relationship for colleges (and other institutions including the universities) was that with the professional institutions. These autonomous bodies set requirements for membership and professional recognition. Many are statutory bodies so that it is not possible to practise in their field without their qualifications. Different institutions have different practices: some set and mark their own examinations; many accept existing qualifications, such as degrees, as wholly or partly exempting students from their requirements.

Venables (1955) recorded that the professional institutions 'exercised a profound influence on the growth and orientation of technical education . . .'. Their prescription of standards and the conduct of their own examinations meant that college courses had to conform closely to the prescribed syllabus and 'very little academic autonomy' remained for the college. However, some institutions did involve the colleges through representation on education and examination committees. Others recognized colleges, after inspection, as suitable for offering the institution's examination.

## *The National Certificate scheme*

The technical college sector did benefit from a range of more equal arrangements involving external agencies, described by Venables (1955) as 'partnerships'. Indeed, partnership became a major characteristic of the sector and eventually characterized the Council for National Academic Awards.

The most important of the partnerships historically was that for National Certificates and Diplomas. The system evolved in the 1920s to meet the need for a high level qualification for part-time study. The problem the colleges had faced had been to offer qualifications with a national currency, for courses created locally. The Board of Education discussed with the Institution of Mechanical Engineers the creation of a qualification 'approaching the standard of a degree for engineers through part time study,' in a way that would permit 'reasonable freedom and flexibility in teaching method'.

The scheme was launched in 1921 in mechanical engineering and in chemistry, and was followed by other subjects. Two levels were offered: Ordinary (held to be roughly comparable, later, with GCE A level) and Higher (gained by two years of part-time study after ONC). Full-time diploma courses were also established. The scheme was the backbone of work for many colleges, and the HNC was the first step on the ladder of higher education for many part-time students, and colleges. By 1953 over 22,000 candidates entered Certificate examinations at Ordinary level and over 9,000 for HNC. For OND and HND the numbers were in the hundreds.

The scheme was run by National Committees, composed of representatives of the education ministries (of England and Wales, Scotland and Northern

Ireland) and the relevant professional institutions (sometimes more than one); later, representatives of the colleges were involved, too. The benefits of the scheme for a college were this element of partnership, and its capacity to offer a national award for courses created by the college, typically in response to demand from local industrial needs. The college would discuss its proposal with HMI, design it within the rules, and apply for approval to the Joint Committee. For the student, the national currency of the awards meant they were often exempted from parts of the examinations of professional institutions.

## *BEC and TEC*

On designation, the majority of polytechnic students were on the bewildering variety of technical and professional courses that had characterized the technical education system for most of the century. In the 1960s, there were 26 Joint Committees operating 16 ONC/D and 25 HNC/D schemes. In addition there were around 120 City and Guilds courses aimed at technicians (Ebbutt, 1977). The wide array of courses had led increasingly to confusion and overlap, and student failure and wastage levels were high (Matterson, 1981).

At the time that the polytechnics were being designated in the late 1960s, concern about technician education led to the establishment of a Committee by the National Advisory Council on Education for Industry and Commerce (NACEIC) to review the pattern and organization of technical courses and examinations. The Haslegrave Report found a system where every new expression of need was met by adding yet another new course to the existing provision, leading to a complex system, difficult for students and employers alike to understand (Haslegrave, 1969). The report identified the need for new machinery 'to plan, administer and review the development of a unified national pattern of courses' for technicians in industry and in the field of business and office studies, and to devise or approve these courses, establish and assess standards of performance and award certificates and diplomas. It recommended the establishment of a Technician Education Council (TEC) and a Business Education Council (BEC). TEC was established in March 1973 with BEC following in May 1974. Similar councils were established for Scotland. Thus by the time the 30 polytechnics had been designated, there was a new set of arrangements for the validation and regulation of many of their courses, in parallel with, though in some important ways different from, those of the CNAA.

## *External degrees*

At degree level, practically the only way a college in the 1970s could offer courses was, as it had been for most of the century, by teaching students for external degrees of universities, mainly the University of London. Many of the polytechnic colleges did so at the time of designation, though for some, university links were a minor part of their work, if they figured at all. The arrangement was not regarded with great favour by the colleges. Venables (1955) called it 'a most unequal partnership'. The courses were created by the University Senate, on which the college did not have members, for examinations approved by the Senate, for qualifications of the University. Colleges wishing to submit candidates for external degrees of London University had, from the 1930s, to be inspected by the University. Venables criticized the University for its one-sidedness when bringing in changes with only 'a semblance of consultation by way of invited comments on paper'. But he recognized its importance as a route for many thousands of students to gain graduate status.

The nature of external courses also raised important educational problems. A former Head of Department in a constituent college of a polytechnic showed how anti-educational the teaching on external degrees was in the 1960s:

> We had little choice as to what was taught. . . . In appropriate terms, each week students wrote an examination answer under more or less exam conditions, and each week I or a colleague gave back the answers of the previous week, with comments and discussion, to the whole group.
>
> (Radford, 1991)

A principal of a constituent college of a polytechnic recorded his views of the system as

> very stultifying. Very backward looking. But you could never change it because the argument always was, there were so many people in the pipeline you didn't know where they were. . . . It was a very stodgy system and it did not inspire creativity in teachers. . . .
>
> (Burgess *et al.*, 1995)

## *Internal degrees*

For some London colleges, there was a slightly more equal partnership with the University of London, which enabled them to teach students on internal rather than external degrees of the University. Colleges in the London area were eligible for this status, and were able to have qualified staff as 'recognized teachers' of the University. Eight colleges achieved this status, five of them precursor institutions of the polytechnics.

But the link with the university system, through the internal degree system in particular, raised national policy issues about what can easily be seen as an early form of 'academic drift'. During the 1930s, the Board of Education was worried that the University's influence on work in technical colleges was undermining their primary function. An internal Board memo said, 'Generally speaking we are not in favour of Technical Colleges laying themselves out for degree work . . .' (Board of Education, 1934). For the colleges, of course, university work was often seen as their most prestigious activity. For students, too, there were advantages of internal status, including membership of the University Student Union. When the polytechnic policy was announced, the loss of historic links with the University was deeply regretted, particularly in colleges with internal degrees like West Ham, merging into North East London Polytechnic.

## *The Diploma in Technology*

Whilst the national certificate scheme and external degrees offered technical colleges the opportunity to work in higher education and to award qualifications at or near degree level, neither system offered colleges the freedom that universities enjoyed. HNC and HND were not degrees and were progressively devalued in status. The colleges were junior partners, or frank subordinates, to universities, and awarded the university's degree, not their own. At the same time, the government was dissatisfied with the response of the universities to the need, as it perceived it, for improvement in higher technological education. The issues came to a head after the Second World War. Two government reports (Percy, 1945) and Barlow (1946) argued for expansion of higher education in the technical colleges. The government vacillated. Should it select certain colleges to concentrate resources or encourage proliferation of courses? It also faced a major educational problem. What kind of courses should the colleges offer? What qualification were they to lead to? The universities were jealous of the title of degree. In the end, as we saw earlier (Chapter 2), the government opted for a policy of concentration by designating eight, later ten colleges of advanced technology, but it also implemented a policy for proliferation in a number of ways, particularly in the establishment of a new body: the National Council for Technological Awards (NCTA), to award a new degree level qualification, the Diploma in Technology (DipTech), to students in any college able to gain approval of its courses.

The NCTA marked a watershed in non-university education. It was a validating, not an examining, body. The NCTA validated the colleges' courses and formally made the award. It developed the traditions of partnership that had characterized the technical college sector. Its Council and Boards of Studies (one each for science and engineering) were composed of representatives of teachers in colleges, professional institutions, the universities and industry. It developed the system which eventually became reified by the title of 'peer review'; colleges made proposals to the Council for courses which were scrutinized by Subject Panels, composed of the college's peers. The college team, at last, had full responsibility for a degree level award. They had to devise and defend all aspects of the course, its justification, structure, content, examination methods, the provision available for it and the quality of its staff. They set and marked their own examinations.

The process had a seminal effect on colleges. It obliged them to involve the whole course team in preparing and defending their course. It offered colleges a lever to persuade their local authorities to improve provision. It encouraged staff to rethink courses and to innovate. They quickly found, for example, that courses based on a university external degree were often not of a sufficient standard for recognition by NCTA (Burgess and Pratt, 1970).

The DipTech itself was available only for courses embodying the 'sandwich' principle, in which periods of study at college alternated with work experience in industry, which became a hallmark of courses in the sector and which later became extended to other subject areas under CNAA. By 1964, over 120 courses with nearly 9,000 students had been approved by NCTA.

By this time, however, policy had moved on. The Robbins Report had been published and its recommendations apparently accepted by the government. The former colleges of advanced technology were to become universities, in a classic demonstration of the process of 'academic drift', thus denuding the non-university sector of its major institutions and degree level work. Another Robbins recommendation, however, was that NCTA should be replaced by a new validating body, the Council for National Academic Awards.

This involved major advances for non-university institutions. CNAA was to award degrees actually called degrees; the university monopoly was broken. They were to be available in all subjects, not just science and technology. Courses could be by all modes of study and for higher degrees and subdegree level qualifications. It was clear from the Robbins Report (see Chapter 2) that the Committee did not envisage CNAA becoming the academic agency underpinning the growth of a whole new sector of higher education, rather they saw it as a stepping stone for the technical and other institutions which would gradually acquire university status in a 'ladder' system of higher education. In the event, CNAA became the engine of academic development in the polytechnics and the route by which they eventually attained their own degree-awarding powers.

## The polytechnics and the CNAA

The CNAA was established by Royal Charter in 1964. Its history has been extensively documented by Silver (1990) and need not be duplicated here, but because the development of the polytechnics was much bound up with CNAA, we need to record some of the features of its work and their implications for the polytechnic policy. CNAA's brief covered the United Kingdom, unlike for example BEC and TEC, so in this respect the development of the polytechnics in England and Wales was closely bound up with that of the central institutions in Scotland and the singular polytechnic in Northern Ireland.

CNAA embodied the elements of partnership and the processes established by the NCTA. Its membership was drawn largely from the institutions and it developed new forms of peer review, increasingly recognizing the role of institutions in partnership arrangements. It created a system of 'accreditation' of institutions and, eventually, facilitated the granting of degree-awarding powers to its major institutions in the 1992 Further and Higher Education Act.

When the polytechnics came into being they faced the need to establish a credible range of higher education courses at degree level, so that, from their inception, the development of the polytechnics was intrinsically linked to that of the CNAA. As we saw in Chapter 3, fewer than 4,000 students in the constituent colleges in 1965 were enrolled on CNAA courses. The growth of CNAA degree work was one of the remarkable achievements of the polytechnics in the ensuing years. Yet the relationship between the polytechnics and the CNAA was not always smooth. Even in the early years the polytechnics looked forward to their own degree-awarding powers, and anticipated the demise of CNAA. As time went on, the polytechnics became increasingly fractious about the constraints of the CNAA.

The Council itself consisted of a Chairman and 25 members appointed by the Secretaries of State for Education and for Scotland, with cooptees and ex-officio members. The appointed members represented the major stakeholders – seven came from the universities, ten from the non-university sector, six from industry and commerce and two from local authorities. The main work of the Council was done through committees, of which there were initially nine, and a range of boards and panels covering subjects or areas of work. Membership of the committees, boards and panels was drawn from a similar range to the Council. From 1966 there was an increasing representation of polytechnics and colleges on committees. The whole process was dependent on the willingness of large numbers of academic staff to serve voluntarily. Given that, in the late 1970s, for example, there were around 100 boards and panels, this suggests that there were perhaps 1,000 members.

CNAA's prime function – to grant awards to students who had completed courses of study or research programmes approved by the Council in non-university institutions – meant that its first main task was the approval or validation of courses. But in seeking to do this, the CNAA was drawn into wider issues, including scrutiny of the internal structures of institutions. As it and the institutions developed, and both sought ways to free the institutions from detailed control, it increasingly concentrated on the institutions' structures and processes, rather than the detail of courses.

Whilst CNAA did not prescribe content or structures, it did specify general educational criteria which all its courses had to meet, as well as regulations about matters of detail. These became collated into 'principles'. The 1987 version, for example, stated that the primary aim of any programme had to be the development of intellectual and imaginative skills (CNAA, 1987b). Whilst studies had to be directed towards greater understanding, the Council also emphasized competence. Programmes could include the acquisition of skills or techniques, but they had to stimulate an enquiring, analytical and creative approach. An element of interdisciplinarity was required.

The institution itself had to offer an environment suitable for study at the level of the course, not only in physical terms, but also offering a suitable academic context, with appropriate structures of governance. CNAA developed a further level of scrutiny – of quinquennial institutional reviews – to establish the suitability of an institution as an environment to offer its courses. These gradually assumed greater importance as the institutions, and the polytechnics in particular, sought freedom from CNAA's detailed procedures, raising the issue of institutional autonomy.

## *Validation*

The first task for the new polytechnics was to get degree courses validated. But new degrees could not be developed in a vacuum: the polytechnics had to establish their own purpose and direction, and the internal mechanisms to enable them to develop and deliver higher education. Given the hierarchical structure and culture inherited from their technical college origins, and in many instances the need to create new identities where a number of colleges were being amalgamated, it is hardly surprising that it took a while for academic boards to find their feet and that the early development of the polytechnics was not uniform.

Initially, the CNAA validation process centred around the course submission. This was a substantial document, setting out the aims and objectives of a course, its entry requirements, structure, content and syllabuses, assessment procedures, facilities and staffing. The submission was considered by the appropriate Board of the Council, and if it was felt to be 'of sufficient merit' (CNAA, 1979b), the Board would form a visiting party to discuss the course with the college. The discussion involved all the course team as well as senior staff of the institution. If satisfactory, the course was approved for five years.

From the outset, CNAA validation procedures were rigorous, and many of the colleges which were to become polytechnics found it difficult to get approval on the first submission of a degree scheme – particularly in arts and social sciences. In 1965 the CNAA turned down all degree proposals from Constantine College, which was to become Teesside Polytechnic: Oxford in 1969 submitted six degree proposals and had none validated, with the Council pointing to 'serious weaknesses of academic control and coordination in the College' (Silver, 1990). In 1967, the Committee for Arts and Social Sciences turned down proposals from Hatfield, Lanchester (Coventry), Woolwich which was to become part of Thames, Huddersfield and Sunderland.

Some polytechnics fared better than others and in general those based on a single institution found it easier to plan and gain approval than those formed from an amalgamation of smaller colleges: Hatfield was fortunate in being based on one main institution, giving it a start in establishing direction and internal mechanisms. Following the 1966 White Paper the Principal, Norman Lindop, with the senior management team set about producing a development plan. By 1968, 20 CNAA degree courses were in place. Hatfield could build on existing strengths in aeronautical engineering and had developed one of the first computer science degrees. Hatfield clearly saw itself as a teaching institution, and required new and inexperienced staff to do an in-service training programme of about 250 hours. On the other hand Bristol, once three constituent colleges, when meeting as a prospective polytechnic was clear that new CNAA degrees would not be able to start until 1971 (Silver, 1990). There was also concern that CNAA degree work should not overshadow diploma and other work. The rapidity with which polytechnics developed CNAA degrees was thus partly determined by each institution's perception of its purpose.

At an early stage, wider issues than simply the content of courses became prominent. At Brighton Polytechnic in 1970, while the CNAA reapproved the honours degree in Computer Studies, the intake was restricted to one year and the ordinary degree was not approved because of staffing and accommodation problems. Similar limitations were placed on courses in electronic and electrical engineering. In 1971 the pharmacy degree was approved but grave concern was expressed over library provision.

As the polytechnics were formed, new course development gained momentum. The increasing pressure on CNAA resulted in validation procedures becoming something of a treadmill, with ever-increasing numbers of subject board meetings and visits. The level and detail of scrutiny, including, for example, critique of reading lists, was creating concern, not only in the polytechnics but also in the Council itself, and it established a committee to consider its future relationships with colleges. Its report, in 1972, recommended easier approval or re-approval when this was justified by the strength of a college; the development of a partnership between the Council and colleges based on a reduction in the inspectorial function and a development in the advisory role of the Council; and less documentation from the colleges. In 1973 *Procedure for Validation of Courses of Study* (CNAA, 1973b) implicitly recognized the developing polytechnics, expressing a desire to respond differently to institutions which differed widely in range and experience. It looked to relax rules in some cases, and focus on smoother course approval as the reward for experience.

The rapid development of courses in the polytechnics was increasingly in areas and in forms which challenged the original CNAA committee and subject board structures, obliging the creation of new boards and committees. The expansion of the polytechnics into new areas was reflected in the work coming to the CNAA in business studies, combined studies (science), mechanical engineering, social science, town planning, and combined studies.

New subject panels were established as the science and technology areas grew: environmental studies, health and medical services, transport, food, accommodation and related services.

Other events promoting course development in the polytechnics added to the pressures on CNAA, and dissatisfaction within the polytechnics with its procedures. Following the James Report in 1972 the Committee for Education was flooded by proposals for courses. In 1972–73 Trent Polytechnic and the Polytechnic of North London submitted proposals for full-time BEd courses; Sunderland and Huddersfield discussed joint honours courses in science and education, part-time BEds were proposed by both Hatfield and Manchester in conjunction with their neighbouring colleges of education. By 1978 the range of work for the Committee had led to the establishment of boards for in-service, undergraduate initial teacher training, postgraduate initial training, and further education, as well as subject panels. The CNAA agreed the introduction of the MEd award in 1975, and in 1977 the Diploma in Professional Studies in Education was introduced.

The amalgamation of colleges of art into the polytechnics helped to precipitate the merger of NCDAD and CNAA, which finally took place in September 1974, and a new Art and Design Committee of CNAA was established. The Diploma now became a BA course. Similarly, the DMS previously validated by a Committee for the Diploma in Management Studies was brought under the CNAA in 1976.

From the outset the polytechnics challenged the concept of the single subject honours degree, through proposals for modular schemes and interdisciplinary approaches and these, in turn, challenged the appropriateness of CNAA structures to cope with innovation, as well as the conceptions of CNAA members as to what constituted knowledge and the essential features of a degree. In spite of this, many pioneering structures were validated: in 1972 the first modular degree was approved. Both City and Oxford polytechnics gained approval in 1973. In 1977 the Interfaculty Studies Board was established as a response to the increasing number of interdisciplinary courses submitted, and the difficulties experienced in validating these within the existing committee structure. In 1978 the Committee for Academic Policy was created to advise on policy issues and coordinate activities across subject areas.

The British binary policy was unique in that it permitted non-university institutions to offer studies up to doctoral level. Nearly all non-university institutions in other countries offered courses only to first degree level, and some, like France, did not award degrees at all. Students in polytechnics could enrol on research degrees of CNAA from the start and did so, albeit in modest numbers, as we saw in Chapter 3. Again, the process was tedious. The model followed that for taught courses, except that every student's programme was treated rather as if it were a course. The model was 'front-loaded' in that students had to set out a detailed proposal for their programme of study. This went through the approval processes of the institution, usually in a research degrees committee, where it might be recirculated more than once until it met the requirements, then had to go on to the relevant CNAA Committee for registration, whence it might again be returned for amendment. Students could spend months, or even years just getting registered. Here, too, CNAA soon began to offer institutions greater, though still limited, responsibility. As we saw in Chapter 5, from 1972, once an institution had acquired sufficient experience of conducting and supervising research work, it could be authorized to register students for MPhil, and 11 polytechnics were granted approval for their research degree committees. In 1981, when CNAA decided that institutions with established research committees could apply to register PhD students directly and transfer students from MPhil to PhD, Newcastle was the first polytechnic to be granted this status, and by CNAA's demise in 1992, 11 others were.

While the original proposals for the polytechnics had not always been enthusiastic about research in the polytechnics, the CNAA affirmed the link between teaching and research and, in validation, enquired actively into the research undertaken by staff to ensure the currency of their expertise. The Council set up a working party under Professor Rochester on resources for research in polytechnics and other colleges (CNAA, 1974). This emphasized that the institutions should 'provide facilities for staff to further their knowledge by advanced study, research, consultative work or secondment to other fields of employment'. The Council expected a significant proportion of staff teaching courses leading to its awards to be engaged in research.

In all these developments, the relationship between the polytechnics and the Council was ambivalent. The CNAA was a mechanism that had facilitated the development of degree level work in a way that had not hitherto been possible. It had supported the development of research degrees and promoted research in polytechnics. The growth of courses was remarkable. Moreover, the courses themselves were innovative and of high standard. A university member of CNAA commented that CNAA 'does a meticulous job as far as I can see and the overall standard of CNAA courses which gain approval is probably much higher than in most universities' (Silver, 1990). CNAA processes, though tiresome, had made this possible in a way that previous mechanisms had not, and in stark contrast to the recent failure to achieve lasting innovation in the new universities, established in the early 1960s (Perkin, 1969). Yet the polytechnics, and some other major institutions, were chafing at its processes and often at its existence. The situation was paradoxical: institutions under central bureaucratic control were more innovative than those with the autonomy that they aspired to.

The reasons for this lay in CNAA's processes, though few in the polytechnics recognized their significance at the time. The argument went, broadly, as follows. Central was the way in which the CNAA mechanism, drawing on the tradition of the public sector, placed responsibility for initiative with the colleges. Institutions themselves designed the course and argued for it. It was this process of argument that was the key to CNAA's success (Pratt, 1982), for if proposals had to be argued before a body of people as knowledgeable as the proposers, basic assumptions were exposed and had to be justified. The CNAA's tedious procedures required the proposers to show how their courses were justified in economic, social and educational terms, to demonstrate their intellectual coherence and progression and to justify teaching and assessment procedures. Often, course teams found that existing assumptions and accepted conventions did not stand up to this kind of questioning. It was, in the end, the academic conservatism of CNAA visiting parties that promoted innovation. As Knight (1993) summarizes, 'the process of meeting, discussing and arguing with colleagues from other institutions contributed to the better education of undergraduate students and a comprehensive knowledge of mission, purpose and processes of higher education'. A further element was the way in which CNAA required the whole course team to be involved in the validation of courses. This offered junior members of staff opportunities for questioning the assumptions of their established colleagues; often, it offered opportunities for personal advance; sometimes senior staff of a polytechnic would appoint a junior member to head a course development team in preference to a more conservative older member. Junior staff, too, quickly realized that the CNAA process offered them a way of outflanking their conservative colleagues. By successful engagement at a CNAA visit a course team could gain approval for a course that was being resisted within their own institution.

Of course, there were valid arguments on the other side, too. CNAA's procedures required vast amounts of information and were costly, particularly in time of the staff involved. Approval of a single CNAA course could involve a stream of lengthy documents, substantial and extended correspondence, and a visit tying up a dozen or more staff for a day, to say nothing of preparation time. Most polytechnics were seeking validation of tens of courses in their early years. Institutional reviews were similar, but often involved several hundred members of the polytechnic staff.

There were problems of the nature of the interactions with the Council. These were inquisitional, despite CNAA efforts to promote dialogue. Colleges put forward proposals to be judged. It was difficult to be wholly frank about problems if the course could be closed as a consequence. There was a danger of discussion centring on the satisfaction of bureaucratic, rather than educational issues. There was the emergence of a form of excluding discourse, which Knight (1993) has called 'CNAA-speak'. Whilst based on the widely accepted educational concepts that underpinned CNAA courses, like 'coherence, 'progression' and 'integration', the terms tended to dominate discussion and those who could trade in them became the successful course developers. Knight (1993) relates how Eric Robinson could start an academic argument on any subject using CNAA-speak and win 'even when wrong'. Success in course validation was often secured by experienced members of polytechnic directorates rehearsing course teams in 'dry runs' of a CNAA visit.

By the end of the 1970s it was clear that the polytechnics were presenting many problems for CNAA. Despite its capacity to validate innovative courses there was also frustration at the Council's conservatism. The CNAA was 'both encouraging of innovation and cautious in its development' (Silver, 1990). Some officers and boards could not, or would not, relinquish old attitudes. It was not clear that the CNAA subject boards had 'assimilated the philosophies of the Committee for Academic Policy' (Billing, 1983). In 1982 CNAA produced revised procedures for validation of courses to ensure that subject boards operated in line with Council policies. The procedures drew attention to the importance of institutions' internal mechanisms. But the Lindop Report in 1985 described the subject boards as out of control of the main committees and the composition of subject boards as a source of conservatism. Subject boards were one explanation for the slow pace of change in CNAA policies and practices in the early 1980s.

It was not all criticism of CNAA so far as the polytechnics were concerned. At Brighton Polytechnic the Director, Geoffrey Hall, had set up an investigation of the role of the Polytechnic in the 1980s which concluded that the CNAA was not unduly restrictive – the professional bodies had been more restrictive in attention to every curriculum detail.

At the same time, new issues were impinging. Following the election of the Conservative government in 1979 an immediate concern for the CNAA was the effect of resource constraint on the quality of its courses and institutions. In 1979 the Chief Officer wrote to institutions reminding them of Council's sensitivity to resource issues; Council wished to be alerted of particular difficulties. The impact of the increasing resourcing problems experienced by the polytechnics became manifest in individual courses, such as the BA in Music at Huddersfield and the Creative Arts degree at Newcastle, which was struggling under acute accommodation difficulties. The CNAA decided to investigate and report.

The role of the CNAA gradually developed from the focus on course validation of the 1970s. It became more involved in recognizing, researching and spreading good practice in course design, delivery, assessment and student experience. It was particularly preoccupied with access by 'non-standard students', encouraging institutions to use the flexibility of the Principles and Regulations. By the early 1980s CNAA was increasingly underpinning judgement on standards of courses by setting them in the context of the institution and its functioning, including emphasizing academic board responsibilities in sustaining standards and guaranteeing student experience.

## *Institutional functioning*

From the outset the CNAA had sought a changed administrative and organizational environment in its institutions from the hierarchical tradition of FE days; there was a particular concern with the health of the new academic boards and the system for continuing scrutiny of courses. At Brighton, for example, a CNAA visit in 1969 was critical of a number of things, including the operation of the academic board and the lack of coordination of departments. The CNAA continued, as a result of review visits to other institutions, to be critical, and impose stern conditions. Quinquennial review visits became increasingly prominent.

At no time was the CNAA concern more public than in the visit to Teesside Polytechnic in 1978. Teesside was small by polytechnic standards with a history of poor local authority support, and CNAA had already been critical of it as an academic community. At the time, the Polytechnic was in the process of merging with Teesside College of Education. The visiting party found faculties in disarray, the paperwork for the visit 'abysmal', and the Director attracting all problems to himself. The party abandoned the prepared agenda to address problems with the academic board and management group. The Chief Officer summarized the findings for the Council:

> The Polytechnic was beset with resource problems but the cause of the Visiting Party's overriding concern was the poor quality of the leadership and the lack of initiative being taken by the Academic Board. There was no real Academic plan and there were no grounds for confidence that the resource levels necessary to support the standards of the courses leading to the Council's awards would be maintained. Despite these serious reservations it was recognized that there was some good academic work being done.
>
> (Quoted in Silver, 1990)

The CNAA concluded that it could not be assured that the Director was properly exercising his responsibility for the 'internal organisation and management of discipline of the Polytechnic' in accordance with the Articles of Government (Silver, 1990). A *Times Higher Education Supplement* editorial concluded: 'The real failure of the Polytechnic is that it has not established a community of academics with a corporate identity and with sound machinery for democratic decision making' (*THES*, 1978).

Within Teesside itself many academic staff welcomed the CNAA judgements on long-standing problems. The Academic Board called for the resignation of the Director, who took indefinite leave, never to return. A further visit in 1979 to Teesside found a different atmosphere from the preceding year: real and substantial progress had been made.

The Teesside affair had implications for other polytechnics. Silver (1990) commented:

> The CNAA's procedures, its concern with the total academic environment in which its courses were offered, had led it – at a time when its relationships with the institutions were under intensive discussion – to a position in which it could directly influence the management and operation of an institution where it perceived weaknesses, as well as the institution's own relationships with governors and the local authority.

As a result, the CDP complained to the Secretary of State over the way in which the Teesside evidence was collected, noting that the visiting party did not include a polytechnic director. They also expressed concern over how CNAA conducted quinquennial visits:

> while not adducing any evidence which indicates an objective failure of student or employer satisfaction or of academic standards, the report makes serious criticisms of the management of the Polytechnic based on a cursory inspection and conversations with members of staff.
>
> (Quoted in Silver, 1990)

While Teesside confirmed CNAA's belief in the value of intelligence about an institution's overall health, it confirmed CDP concerns over the power of CNAA in polytechnic internal affairs.

One consequence was that the next quinquennial visits were conducted in a somewhat heightened atmosphere. CNAA was anxious to demonstrate its intention to establish partnerships with its institutions. The institutional visit to Leicester in 1979 had been heralded by the *Times Higher Education Supplement* (*THES*, 1978) as part of a CNAA 'courting campaign'. CNAA was preparing its document on partnership in validation (CNAA, 1979c) for publication. Nevertheless, the next polytechnic to receive an institutional review after Teesside – North East London – prepared for it almost as a military campaign. The Polytechnic commissioned its own research unit, the Centre for Institutional Studies, to monitor the visit and invited an international observer (an officer from OECD in a personal capacity). The visiting party was also treated to the most sumptuous dinner ever known in the institution.

The Centre's report (Locke *et al.*, 1980a) was a unique record of CNAA processes. It showed how, despite the best efforts of both parties, discussions were inevitably in an adversarial mode, and directed by the chairs of either side. Most discussion items were initiated by CNAA and most concerned organizational rather than educational issues. But the CNAA visit to NELP was the last under the old arrangements. Thereafter, partnership in validation was introduced. The validation of individual courses was no longer at stake, once an institution had established itself as a suitable environment for higher education, and CNAA visits were reviews, rather than revalidation. Increasing responsibility lay within the polytechnics and it was not long before further steps to accreditation of institutions took place. But the experience of the institutional reviews had shown how difficult it was to establish a partnership in the situation of inequality that characterized CNAA and its institutions.

Paradoxically, the move to partnership and accreditation, by placing greater emphasis on the CNAA's involvement with the institution as a whole rather than its courses, led to most criticism in the polytechnics. In 1981, Ball summarized the 'ineradicable scepticism about the appropriateness and value of this part of the Council's work' (Ball, 1985). He perceived that Council's contribution to advancement of education, learning, knowledge and the arts had been through the work of the subject boards. In 1982 the Chief Inspector of Further Education in England acknowledged the outstanding contribution of the CNAA, but also that institutional reviews were the most criticized aspect of CNAA work. One other consequence of the greater emphasis placed on internal procedures for validation was that more demands were placed on senior staff in institutions, and their authority increased, so weakening the role of course teams. CNAA often appeared more palatable than the internal hazards.

## *Partnership in validation*

From the beginning, some polytechnic directors challenged the need for the CNAA at all and fretted at its validation procedures. From its creation in December 1969 the CDP raised the issue of charters for polytechnics. A press release in 1971 expressed the wish for polytechnics to secure charters of their own within five years. However, within CDP there were divisions between polytechnic directors on matters of strategy and relationships with the CNAA; some were more impatient than others. In July 1971 the Chairman of CDP wrote to three polytechnic directors to prevent them writing to the Secretary of State about the possibility of gaining degree awarding powers (Silver, 1990). The differences between institutions accounts in part for the differences of speed and conviction with which they raised the question of independence, and this diversity led CNAA to move cautiously in discussions about relinquishing control.

As we saw earlier, CNAA itself recognized early on that there was a need to change its relationship with the polytechnics and colleges. A memorandum in 1968 addressed the need to streamline procedures, and foresaw the point at which much detailed work could be dispensed with and a different relationship established (CNAA, 1968). The committee set up concluded in 1969 that a college, 'as it reaches an appropriate state of excellence, should be subject only to the minimum of control by Council consistent with the duties imposed by its Charter' (Silver, 1990). Putting this into operation was to prove more difficult and contentious than envisaged.

The discussion between CDP and Council continued throughout the 1970s. CDP itself was uncertain about its intentions. One proposal from the CDP Academic Affairs Standing Committee was for 'self-validation', but a 1974 CDP paper spoke of a 'transitional process' from dependence on a validating body to self-validation 'within a relationship with the CNAA'.

CNAA was unwilling to go as far as delegating authority for approval of courses, pursuing instead the idea of 'internal validation'. In 1975, *Partnership in Validation* was published by CNAA: the subsequent consultation, expected to last less than a year, overshot by three years. *Partnership in Validation* 'envisaged a dynamic relationship with institutions,' the prospect of a closer partnership in which 'the procedures leading to validation are progressively transferred to them' (CNAA, 1975). Particular institutions were to be authorized to carry out the 'main validation procedures' leading to the approval of courses in 'well established subject areas', subject to quinquennial review. The Council recognized 'the existence within a number of institutions of high quality academic work, experience, maturity, constructive self-criticism, and effective and thorough academic decision making processes'. In particular CNAA recognized that some polytechnics had established successful 'internal validating committees' as sub-committees of the academic board.

The CDP had broadly welcomed the thrust of CNAA's arguments; however, *Partnership in Validation* itself was not well received by CDP, who found its proposal to limit self-validation to specific subject areas rather than the institution as a whole objectionable, and offering no real freedom. The CDP Academic Affairs committee agreed that 'CNAA should be informed that the CDP did not wish to accept the form of partnership proposed in the discussion document' (CDP, 1975); a different approach leading to a better form of partnership should be explored. In 1975 consultations took place between CDP and CNAA on the possibility of self-validation, with the CNAA having a watching brief through quinquennial visits. But CDP itself was unable to agree on a policy direction of its own.

Individual polytechnics were less inclined to wait. Newcastle Polytechnic was one which took active steps to prepare for self-validation. In 1974 a Course Coordination sub-committee of the Polytechnic's Academic Planning and Development Committee was created in anticipation of selected polytechnics receiving a measure of self-validation. Newcastle was also the first polytechnic to develop the concept of course review: it realized that it 'ought to take responsibility for the quality of education provided . . . not simply find out every five years whether a course was judged to be satisfactory or not' (Silver, 1990). As the success of courses submitted to CNAA for validation was still variable, the Directorate concluded that an internal system was needed to ensure that submissions leaving the Polytechnic were of high quality and in 1975 established a course review sub-committee. In its first year the sub-committee reviewed over 150 courses. The correlation between internal findings and those of the CNAA improved. Developments at Newcastle were watched with interest by others, including CNAA.

Following the consultation process on *Partnership in Validation*, CNAA concluded that the benefits of the present system outweighed those of a less secure form of validation. Two extreme counter-arguments had emerged (Silver, 1990). On the one hand, it was felt that the only true test of academic responsibility lay in an institution validating and awarding its own degrees. Many polytechnics were now as large as universities and in a similar (if not better) condition to the CATs when they became universities. It was humiliating and unfair to keep them in tutelage to the CNAA. On the other hand, self-validation was not necessarily an ideal system. It existed in universities for historical reasons only; the CNAA system had the advantage of drawing on much wider academic expertise than could be offered within a single institution.

CNAA established a further Working Party to pursue the discussion; its interim report in 1978 was rejected by Council. Early intentions within the committee were to reduce the influence of the subject boards, with CNAA relating primarily to the institution as a whole. It finally proposed a

'Committee for Institutions' to review visits, coordinate institutional reviews and course validation, and to monitor 'the interplay between the internal procedures of the institution and the Council's procedures for the approval of courses' (Glanville, 1979). *Developments in Partnership in Validation* (CNAA, 1979c) was circulated in September 1979. The Committee for Institutions was duly established.

CDP meanwhile was developing proposals of its own. David Bethel, Director of Leicester Polytechnic, proposed an individual 'institutional committee' for each institution designated as having achieved 'mature status' to act on behalf of CNAA and to replace review visits. This did not gain CNAA support and the late 1970s saw an increasing gulf developing between the CDP and the CNAA. The Teesside affair had served to reinforce the fears of the polytechnic directors, and *Developments in Partnership in Validation* (CNAA, 1979c) was seen as conservative, demonstrating an unwillingness by the CNAA to go very far towards new relationships. When CNAA came to discuss the working party report in February 1979, some polytechnic directors on the Council, including Geoffrey Hall from Brighton and Norman Lindop from Hatfield, found it to be depressing and lacking radical solutions.

*Developments in Partnership in Validation* proposed six major changes. There were to be improved procedures for the initial approval of courses, indefinite periods of approval, and replacement of the process of the renewal of approval of courses by progress review visits. The limits within which institutions could change approved courses were to be extended, and institutions could propose variations from the normal validation methods. There were to be improvements in the procedures for linking course validation and institutional reviews.

Newcastle Polytechnic immediately took advantage of *Developments in Partnership in Validation* to propose substantial changes in its relationship with the CNAA in 1979. It invited the Committee for Institutions to conduct a formal assessment of the Polytechnic's validation and review procedures, and to agree that future course validation and reapproval should be carried out by Joint Validation Panels comprising representatives of the Academic Board, of CNAA subject Boards, and external academic or professional people. Following a successful visit in July 1980, a pilot scheme operated in 1980–81, with joint validation and review from September 1981. In the first year there were problems in getting subject boards and visiting teams to cooperate, but these were ironed out in the second year, and it was judged a success by both sides: 'the experiment had shown that joint validation is at least as effective as conventional subject board validation' (Silver, 1990).

It was agreed that joint validation should be the basis of a continuing relationship with Newcastle. Newcastle itself wanted more with progressive delegation of responsibility from CNAA on the model of periodic institutional accreditation, giving the Academic Board power to validate new courses, to conduct progress reviews and reapprove existing courses, and to make modifications to courses.

After 1980 there were minimal developments in partnership in validation. The experiment at Newcastle offered one way forward, but many saw it as potentially prolonging the stalemate between CNAA and the CDP. Sheffield City and Kingston Polytechnics also reached agreements with CNAA in 1980. CNAA placed a moratorium on other agreements as it awaited the outcome from Newcastle. CDP wanted a bolder step, and Portsmouth was seeking an alternative route; given its long history of degree work it was looking to be granted its own Charter in the long run, but first exploring what was possible under the CNAA – wanting it to approve its procedures for oversight and validation of courses – with quinquennial reviews. The Polytechnic was unhappy with the operation of subject boards, and with joint validation. By 1984 Leicester and Manchester were also seeking a similar arrangement to that proposed by Portsmouth and questioning the necessity of the CNAA in ensuring standards.

While the CDP continued to criticize CNAA's slow progress towards accreditation of institutions, the government was not ready at this stage to let individual polytechnics award their own degrees. The polytechnic directors were not speaking with a unified voice, and demands for independence by directors were not always shared by academic staff.

Further questions about the relationship between the polytechnics and CNAA were raised after the setting up of the National Advisory Body for Local Authority Higher Education (NAB) in 1982. NAB's task (see Chapter 7) was advising on the allocation of funds for higher education in the local authority (later public sector), and it sought CNAA's advice on the quality of courses. NAB proposed to close four courses in Town and Country Planning in 1984–85, two of them in polytechnics (at Coventry and Central London). CNAA gave advice to NAB, describing the courses at Coventry as being 'of high quality as judged by a wide range of criteria'; and for PCL, stressing 'the unique urban/metropolitan policy emphasis of the course,' but it was unable to make out a case for particular quality of the other two. 'Ensuing controversy was intense and acrimonious' (Silver, 1990) and severely damaged the relationship between the polytechnics and the CNAA. Trent Polytechnic went as far as refusing to accept a visit from the Town Planning Board, which led NAB to withdraw administrative approval from its course.

At issue was the use of the information gathered in validation. The CNAA reviewed its position, affirming that the traditional function of validating and reviewing courses and institutions would be kept separate from the function of providing advice to NAB. The purpose of validation and review visits was to remain that of judging whether courses were of the required standard to receive approval or continue in approval. Council was 'anxious to ensure that the process of external peer group evaluation is not adversely affected by its involvement with the NAB and is further developed on a partnership basis' (Silver, 1990).

The decision to provide the information flew in the face of prior CNAA policy, although CNAA did consult institutions about it. CNAA's response to the government's consultative document, *Higher Education outside the Universities* (DES, 1981b) had recorded its 'traditional function' of judging whether courses were of minimum acceptable standard. 'For CNAA to become involved in the comparative ranking of courses would imply a change in its methodology and in its relationships with institutions'. In relation to NAB, the CNAA was walking a tightrope. It was willing to convey factual information, but none which included or implied a quality judgement on courses or institutions. Its concern that NAB plans lacked a qualitative dimension led it to go as far as possible to indicate where the main strengths of the system were to be found. It was not the choice that the system appeared to want.

The role and integrity of the CNAA in guaranteeing the standards of polytechnic courses was further called into question in 1983 by events at the Polytechnic of North London. In February a former member of staff wrote to the Chairman of CNAA and the Secretary of State for Education alleging political bias and malpractice in the assessment of students in sociology and applied social studies. This was not the first time that allegations of political bias had been levelled at sociology; in 1975 the CNAA Committee for Arts and Social Sciences had investigated complaints, and while satisfied that academic standards were being maintained, had continued to monitor the course closely for another three years. The letter arrived before a CNAA visit to review the two courses but was not communicated to the visiting party. The two courses were well established; while the visiting party had some concerns over objectives and library resources, they concluded that the approval should continue; the courses had been revised in the light of the staff's 'genuine attempt to confront academic and structural problems'. The report of an institutional review visit in March 1983, while critical of some aspects of the Directorate and Academic Board, had not addressed the question of bias.

However, the Secretary of State, Sir Keith Joseph, had long had misgivings about PNL as an institution and sociology as a discipline. At short notice an HMI inspection was arranged for the end of April 1983. HMI was critical of student 'spoon-feeding' and casualness in student attendance and inattention in lectures; 'academically bizarre' references in course booklets; and the narrow – extreme left – viewpoints of some lecturers: 'it comes as no surprise that so few students fail . . . the fail-safe procedures virtually make this an impossibility' (HMI, 1983b). The popular press picked up the story with relish, with headlines such as 'College where nobody fails' in the *Daily Mirror*, and in the *Daily Express*: 'Marxist-bias poly courses condemned'.

The CNAA conducted its own enquiry and came to the conclusion that the allegations could not be substantiated. The CNAA was also critical of much of the evidence and views in the HMI report. The *THES* (7 October 1983) also castigated the HMI report for its 'ignorance of the standards that can reasonably be expected'. But the events at PNL undoubtedly contributed to the decision to set up a Committee of Enquiry in April 1984 under Sir Norman Lindop into the whole question of academic standards and validation in the public sector.

## *Institutional accreditation*

The terms of reference of the Lindop Committee were to:

> identify and examine key issues for the effective and efficient maintenance and improvement of academic standards in the way those responsible for the academic validation of first and higher degree level courses in the public sector in Great Britain discharge their responsibilities.
>
> (Lindop, 1985)

Its establishment owed something to the recurring question of the polytechnics' status, the government's policy of disbanding 'quangos' and the desire to reduce public expenditure, combined with the PNL dispute.

It was an opportunity for the polytechnics to record their wishes for degree-awarding powers. CDP evidence to the enquiry was that the process of validation could be simplified, and that little progress had been made in taking into account the maturity of institutions, concluding that there were 'no valid academic reasons why some public sector institutions should not be self-validating' (Lindop, 1985). The report agreed with much of this, viewing CNAA as 'a ponderous and inflexible system in which form is disproportionate to substance' but it recorded also that 'the importance of the contribution made by the CNAA to higher education is beyond question; without it the public sector could not have developed so far and so fast over the past twenty years' (Lindop, 1985). The problem was that 'the very speed of that development' made it 'imperative that the CNAA should shake off its apparent tendency to rigidity' to be able to continue 'to foster rather than stifle the achievement of high standards in institutions'.

It proposed that institutions should be expected and encouraged to take responsibility for their own academic standards, so far as they could and wished to, although the system should accommodate the differences between institutions' abilities to do this. The preferred option was to allow institutions to apply to the Secretary of State for power to award their own degrees and so become self-validating. To safeguard standards, external control should be replaced by the 'growth of the teaching institution as a self-critical academic community'. This was a phrase that was to condition the relationship between CNAA and the polytechnics for its remaining years.

The CNAA, in its response to Lindop, welcomed the proposals in general terms, and then reaffirmed its conviction that institutions needed to be externally accountable for the quality of their courses and that the compatibility of standards needed assuring nationally. It proposed petitioning the Privy Council for changes to its Charter to more clearly distinguish its roles as a validating body of new courses and conferment of awards, and as a review body responsible for a national system of external peer review.

Whilst the Lindop Committee was still sitting in 1984, the CNAA finally issued a consultative paper on its future relationships with institutions, proposing two modes. Mode A would involve a positive and deliberate development of the relationships between institutions and the Council, while in Mode B the Academic Board of an institution would exercise authority for the validation and review of all taught courses leading to CNAA awards. The responses from institutions ranged from disquiet to hostility. A number of polytechnics were looking for greater authority than that envisaged by Mode B. Nevertheless, in July 1985 the Chief Officer of CNAA wrote to all institutions inviting Academic Boards to make proposals for the development of their relationship with CNAA in the immediate future and for suggestions for streamlining validation and review.

Meanwhile, Newcastle and Sheffield were negotiating further developments in their institutional arrangements. Sheffield reached agreement that, for one year, the conduct of all course reviews and the validation of new courses should be transferred to the Academic Board, subject to the involvement of members and officers from the Council's committees and boards in the review and validation processes and a full exchange of information on the review and its outcome.

The polytechnics, in general, were not happy. With the government's decisions on the Lindop Committee Report awaited, and the CNAA pressing to develop new relationships with its institutions, the CDP wrote to Sir Keith Joseph to express opposition to CNAA developments. CDP noted that some polytechnics were in negotiation with CNAA over specific developments which appeared to offer substantial delegated powers, and that CNAA was exerting pressure to make as many of these agreements as possible, even though decisions about the Lindop Committee's recommendations remained unknown. By the end of October 1985, 16 polytechnics had indicated their desire to negotiate delegation of authority, but others decided to await Sir Keith Joseph's decisions before taking action on their relationship with CNAA.

Eventually, in March 1986 the government responded to the Lindop Committee. It was not persuaded that polytechnics and colleges needed to be granted full autonomy in validation, with powers to award their own degrees. It welcomed the changes the CNAA was making along the lines of the Lindop Committee's recommendations, perceiving that they would result in significant savings in the resources needed by CNAA. Before reaching a final decision on the options offered by Lindop it wanted to see evidence of further devolution of responsibility and improvement and streamlining of procedures.

In October 1986 the CNAA, in its consultative document, *Quality and Validation: Future Relationships with Institutions* (CNAA, 1986b), moved closer to the polytechnics' position, proposing a system of institutional 'accreditation'. Accredited institutions, expected to be mainly polytechnics and the Scottish central institutions, would have authority to validate and approve new courses and review and modify existing ones. All CNAA institutions would also be able to confer awards in their own name on Council's behalf. The old-style subject boards were to disappear. CNAA's role would become that of providing information and advice on good practice for validation and review, and acting as a national centre and focus for information and intelligence on curriculum development, course design, learning strategies, student assessment, performance criteria, credit transfer and other matters of common concern.

The polytechnics broadly supported the proposals, although resisting the requirement for two CNAA 'policemen' to be involved in all course validations and reviews, and wanting the interval between review visits extended. As a result, the paper *Future Strategy: Principles and Operation* (CNAA, 1987b), while keeping the review process at five to seven years, no longer required mandatory CNAA nominees, requiring instead persons from outside the institution to be involved in review and validation. Under the arrangements finally agreed, institutions would have to apply for accreditation and would be visited by a panel from the CNAA Institutions Committee. If successful they would operate under an Instrument of Accreditation, which required them to observe the Principles and Regulations of CNAA, review courses at intervals of not more than seven years, and provide the Council with regular reports. Validation and review arrangements had to include people from outside the institution and at least one person with experience in industry, commerce or a profession. CNAA would itself review the institution at intervals of not more than seven years, and it had power to withdraw accreditation if the institution was found to be failing to maintain standards or comply with the conditions of the Instrument. CNAA courses offered in collaboration with other institutions, through 'franchising' in other colleges for example, would also be covered under the arrangements, although the form of the collaboration would have to be approved by CNAA. Following the receipt of its supplemental Charter in February 1987, Council agreed that institutions with experience of running research degree committees with extended powers should be eligible to apply for accreditation of research degree work.

When the proposed 'Instrument of Accreditation' was received by the polytechnics in June 1987, most immediately took action. By 30 August, 21 had applied, and by November Manchester had received the first visit. By September 1988, 26 polytechnics had obtained accreditation for taught courses, as well as a college of higher education and two Scottish central institutions, and eight polytechnics were accredited for research degree programmes. By summer 1989, all the polytechnics in England and Wales were accredited for taught courses.

Accreditation raised new questions about CNAA's role. Harris (1990), a CNAA officer, perceived the first phase of CNAA's relationship with institutions, which lasted until the mid-1970s, as relying heavily upon the contributions of university teachers to establish academic standards. Under the conditions of expansion, CNAA was able to be prescriptive about the conditions under which approval could be offered, including staffing and physical resources. As CNAA increasingly became an accreditor of institutions rather than a validator of courses, so the phrase 'quality assurance' entered its vocabulary. Accredited polytechnics became quality assurance bodies, concerned with the effectiveness of course design, the course delivery process and the quality of output of courses (Harris, 1990).

CNAA was not alone in this. The 1980s were a time of almost obsessive interest in 'managerialist' approaches to higher education, which were manifested in governance and financial mechanisms. The system as a whole grappled with the relevance of ideas of total quality management and spent endless time discussing and researching what 'quality' meant in higher education (Barnett, 1992; Green, 1993; Goodlad, 1995). In the university sector, the concern about quality assurance led to the establishment of the Academic Audit Unit which, though established voluntarily, paralleled some aspects of CNAA's work.

For the polytechnics and other institutions, the changing ideological and intellectual framework meant an increasing concern with the structure and processes of the institution rather than detailed concern with the content of courses. It was a mixed blessing. As CNAA concentrated on establishing whether institutions were 'self-critical academic communities', quality assurance came to be increasingly a managerial rather than an educational matter.

## *Degree-awarding powers*

Despite the changes in CNAA's mode of operation, the pressure from the polytechnics for degree-awarding powers continued. Indeed, it was reinforced by their independence from local authorities in the 1988 Education Reform Act. There was also the imminence of the reviews of the first round of accreditations, due to begin in 1992. CNAA began considering this issue early in 1990. Institutions were reluctant for their accreditation to be reconsidered. The concern was heightened when an unfavourable HMI inspection on aspects of work at the Polytechnic of East London prompted a discussion with CNAA officers on the way in which it was carrying out its responsibilities under the Instrument of Accreditation. This led to a visit by a panel from the Institutions Committee in February 1992. The panel raised a number of concerns, though the Chief Officer of CNAA was insistent that accreditation itself was not at stake. The Polytechnic was, however, recommended for an early visit from CNAA's successor body.

These developments, together with continuing government concern about the role of CNAA, led to further changes. CNAA appeared to be under continuous review, and events moved swiftly. HMI had undertaken a survey of validation and review arrangements for CNAA courses from 1987–1989 (HMI, 1990f). The government commissioned a review of CNAA by Richard Bird, Deputy Secretary at DES and HMI Alan Callaghan, which reported in 1990. Both these reports broadly supported the polytechnics' ambition for greater freedom and raised questions about CNAA's future. Neither actually proposed its abolition, and the Bird Report contemplated an 'evolutionary prospect' with continuing functions for CNAA over institutions with their own degree-awarding powers, as well as a validating body for others (Bird and Callaghan, 1990).

The HMI survey summarized the findings of inspections aimed at assessing how successfully CNAA had achieved the objectives set by the government in its response to the Lindop Report. The government had said it would look for evidence on five issues: that mature institutions had been encouraged to take the appropriate degree of responsibility for course design and maintenance of quality; that institutions which were sufficiently mature and wished to take greater responsibility for validation and the award of degrees had collaborated fully in developing appropriate arrangements; that there had been a substantial reduction in the central costs of validation, including paperwork and time of all involved; that 'profitless duplication' between the activities of validating and professional bodies and institutions had been eliminated; and that adequate attention was being paid to delivery and outcomes of courses. The HMI report was based on nearly 200 CNAA validation and review events and on other inspections of colleges and polytechnics. It was a subtly damaging document.

In a patronizing statement, the report concluded that CNAA had 'done much' in its 25 years 'to develop a concern with quality in the polytechnics and colleges'. The institutions had taken 'significant steps' towards becoming 'self-critical academic communities'. Their validation and review procedures were carried out thoroughly and with integrity. Institutions had been innovative and flexible. In general, the government's first objective in relation to Lindop had been met. The report recorded that, as yet, there had been less success with the others. The problems were familiar, including excessive documentation, complex procedures, duplication, cost, inadequacy of subject expertise on some panels, and under-developed evaluation of delivery of courses. The report found that the role of CNAA in 'quality control' was decreasing, and inferred from this that it was 'increasingly vestigial'. CNAA had identified functions for the future including re-accreditation of institutions, continuing validation, implementation of arrangements for research degrees, approval of external examiners, conferment of awards, dissemination of good practice and promotion of access to higher education. HMI concluded that all of these were legitimate and necessary, but, in its final sentence, invited CNAA's demise: it would be for the forthcoming Bird review 'to address whether the functions should be carried out by CNAA and/or others'.

The Bird Report also accepted the polytechnics' case, but saw a continuing role for CNAA. It recommended that degree-awarding powers should be granted to the polytechnics in England and the corresponding institutions in Scotland and Wales, but only when they had accreditation for both taught courses and research degrees. It saw a need for periodic scrutiny of the institutions' procedures for ensuring quality, and for a central validating body for the many institutions without degree-awarding powers. Both these functions could be carried out by a reconstituted CNAA. CNAA itself would have 'shared ownership', with institutions paying subscriptions and with a budget reduced by about £2m from its current level. The report raised the possibility that CNAA could merge with the recently established

Universities Academic Audit Unit to act as a quality assurance body for the whole of higher education.

The polytechnics were disappointed with the Report, particularly the requirement that they should have research degree accreditation before receiving degree-awarding powers; CDP was – unexpectedly given its previous stance – concerned at the proposed cut in CNAA's budget. There were, at last, some signs that the polytechnics were prepared to publicly recognize the value of CNAA. There was also concern that the 'wealth of expertise' built up in CNAA would be lost (*THES*, 1990b); Bird had failed to do justice to the vast range of developmental, information and quality enhancing activities it carried out, and to the dispersed network of expertise it had established throughout the sector. Bird was not alone in this omission. The Director of the Polytechnic of North London saw these activities as 'valuable' but 'by-products of CNAA's work' that could not become 'its *raison d'être*' (Wagner, 1991). Whilst this may have been historically correct, in future quality enhancement would be a key activity of any new quality body.

Again, as with the Lindop Report, a government decision was delayed. Ministers saw degree-awarding powers as bound up with the wider issues of quality assurance arrangements for the system as a whole, and these would require legislation. There were issues arising from the freeing of the polytechnics and other colleges from local authority control only a year earlier. However, a 'trans-binary' quality assurance body was under consideration and the institutions were anxious to ensure that they had control over it; CDP initiated discussions with the CVCP about such a body, owned by institutions.

It was nearly a year after the Bird Report that the 1991 White Paper finally made clear the outcome of the government's deliberations. The polytechnics and other major institutions were to have degree-awarding powers, though the White Paper did not make clear exactly what criteria would need to be met. But CNAA's fate was sealed. It was to be abolished. Other non-university institutions would have to seek validation from those with degree-awarding powers. The polytechnics thus acquired a new function of validating courses in other institutions, paradoxically finding themselves in a similar relation to these as they themselves had been, unhappily, with universities in the 1960s. A single new academic audit unit would be set up. Though the White Paper permitted the institutions to make this arrangement, reserve powers would be taken to ensure its satisfactory establishment. 'Quality assessment' of provision would be the responsibility of the new funding councils and based around existing HMI procedures and staff and would be expected to inform funding decisions.

The White Paper precipitated a flurry of activity for the CNAA. Whilst it was to lose many of its institutions and students in the polytechnics and other major colleges by 1992, many of its other, associated, colleges were seeking accreditation, hoping to secure degree-awarding powers themselves. In November 1991, only a few months before the 1992 Act was passed, CNAA Institutions Committee anticipated no less than 19 accreditation applications from institutions as diverse as the Derbyshire College of Education (which eventually attained degree-awarding powers and a university title) and the Central School of Speech and Drama (CNAA, 1991b).

The 1992 Further and Higher Education Act translated the White Paper and subsequent decisions into law. The polytechnics at last acquired degree-awarding powers and university titles. At the time of dissolution of the CNAA in 1993, they were joined by six other colleges in England with degree-awarding powers, one of which (Derby) also attained the title of university, and six in Scotland (four with university titles). Although the universities Academic Audit Unit was wound up and CNAA finally dissolved in 1993, all the universities, including the former polytechnics, now came under the external scrutiny of new quality assurance mechanisms. The Higher Education Quality Council was set up in May 1992 and funded by subscription from all universities and colleges of higher education to carry out regular audits of institutions' quality assurance processes and to act as a quality enhancement service.

## Technician and business education

Whilst the polytechnics set off on their long-held ambition to have degree-awarding powers, it is worth remembering that, initially, the majority of polytechnic students were under the academic aegis, not of CNAA, but other examining and validating bodies, particularly TEC and BEC. Although the polytechnics developed increasing numbers of degree courses, TEC and BEC, and their successor BTEC, remained responsible for the large proportion of their sub-degree level work. There were some similarities, but also important differences between them and CNAA.

The contexts in which TEC and BEC developed differed. The concept of the technician was clearly established in engineering and scientific fields; it was less obvious how it applied to the business field. Employers in the technical fields were more aware of the need to train staff at this level, and the demand for courses was clearly established. Employers in business were not clear about training needs and the size of demand was difficult to estimate. Only three of the 26 Joint Committees organized awards in the areas covered by BEC, the rest lying within TEC's remit.

Like CNAA, TEC saw itself primarily as a validating body and it had hopes, like CNAA, to be innovative and to allow initiative for innovation to come from within institutions. In its first policy statement in June 1974, it hoped 'that many new developments and initiatives will originate from colleges and other establishments in the field'. In some respects, TEC was more prescriptive than CNAA. It adopted a unitary or modular system for its courses leading to the four qualifications recommended in the Haslegrove report: the Certificate, Diploma, Higher Certificate or Higher Diploma. (Craft level courses below Certificate and National level were left to City and Guilds.) The awards were not associated with modes of attendances – any TEC award could be obtained through full-time, part-time, day release or block release, sandwich or evening study, or a combination of these. TEC provided colleges with ready-made units if they wished to use them; courses could consist of standard units devised by TEC programme committees, or be college devised, according to validation guidelines from TEC. Any programme would consist of compulsory, optional and 'supplementary' units, which were designated by level to give a sense of progression. TEC, like CNAA, required college proposals to contain statements of objectives, a syllabus and the proposed method of assessment. An element of general and communication studies, equivalent to at least 15 per cent, was required in each programme, as well as health and safety material.

TEC did not provide a system of external examination; rather it left it to colleges to devise appropriate schemes, adopting a system of moderating and controlling the colleges' internal assessment procedures through the appointment of an external moderator for each programme.

TEC met with considerable criticism from polytechnics and colleges because of its complex programme submission structure, demanding a wealth of paperwork and high costs. It was also felt to have taken too narrow a view of technician education, an overly narrow analysis of industrial need. TEC failed to recognize the standing and expertise within the polytechnics in devising its system for course design and approval. Its controls were held to be more bureaucratic than CNAA, and more concerned with procedural minutiae than educational standards (Matterson, 1981).

The first TEC programme was approved in 1976, and the development of Certificate and Diploma courses proceeded furiously. In 1977 TEC added to its remit by agreeing to provide national validation for technician courses in Art and Design, and set up the Committee for Art and Design (DATEC). The provision of Higher Certificate and Diploma courses proceeded more slowly and this presented further problems for the polytechnics and other colleges. While TEC had started with a decision to abolish existing ONC/D and HNC/D courses and replace them with its own (Ebbutt, 1977), by 1979 there were still no plans to phase out HND courses in engineering, as the Joint Committees running them had expressed a lack of confidence in the proposed TEC courses (Cantor and Roberts, 1979). In the polytechnics the HND and degree courses were designed to provide interrelated opportunity, but the structure and objectives of the new Higher Diploma awards did not easily fit into the same framework (Matterson, 1981). In engineering, the proposals of the Finniston Report did not link well with the higher TEC awards. This represented a major setback to TEC's attempts at rationalization. Some students who completed lower level courses found that higher level courses were not yet available, and that arrangements for transfer from TEC courses to HNDs had not been fully worked out (Ebbutt, 1977).

BEC's requirements for its courses differed in significant ways from those of TEC. From September 1975 it gradually replaced the awards offered by the three Joint Committees by its own awards, established at three levels: General, National and Higher National. As with TEC, courses led to a Certificate or Diploma, distinguished not by mode of study but rather by breadth of performance. BEC, however, moved rapidly to negotiate with CNAA for recognition of the awards for entry to, and exemption from, parts of degree courses, and also to arrange for entry and exemptions with various professional bodies.

BEC also adopted a modular system, with 'core' and 'option' modules. Four themes, considered basic to its concept of business education, were to be an integral part of every course, and the design of courses at general and national level would be undertaken by BEC itself. Unlike TEC, there was no requirement for a separate general studies component in programmes.

For Higher National courses, BEC recognized that the polytechnics and other colleges already had considerable experience of designing and examining; so they were free to innovate within agreed parameters, as long as there was a well defined structure, based on core and optional modules, and the four central themes were included in the core. It also encouraged concurrent work experience within the course. Criteria for assessment procedures were prescribed, including the need to incorporate an adequate recognition of work during the course and a significant emphasis on written examinations. Like TEC, BEC appointed moderators to monitor standards (Cantor and Roberts, 1979).

While BEC and TEC were two distinctive organizations, they retained much in common, both in the similarity of their remits and the fact that the CGLI provided a secretariat for both. Recognizing this, they established a joint Working Party to achieve effective cooperation, and had joint working parties in Computer Studies and Mathematics and Statistics, devising and validating modules which could be part of a BEC or TEC award.

## *BTEC*

It was increasingly apparent that the Councils of BEC and TEC should join forces, and the Business and Technician Education Council (BTEC) was established in January 1983, taking over from BEC and TEC in October 1983. Its members, as in the precursor organizations, were from industry, commerce and education.

While there was much that the merging organizations shared, there were also important differences in levels of awards, approaches to modular structure and assessment. TEC allowed greater freedom for colleges to use either external or internal assessment, BEC requiring a combination of continuous and external examination. TEC graded only the individual units of the award, while BEC also required classification of the final award. Both had different approaches to the place of general studies in programmes, and while both used moderators to audit the quality of courses, BEC placed greater reliance on the use of part-timers.

The initial committee structure of BTEC comprised nine sector boards to cover courses in the main industrial sectors. This allowed the different traditions of TEC and BEC to continue in BTEC, and criticism was expressed by polytechnics and colleges about different standards and advice from the various Boards. A major reorganization in 1988 established four main departments, of quality assurance, product development, marketing and student administration, to develop a corporate approach across all sectors. In 1991, BTEC, while keeping its initials, quietly changed its name to become the Business and Technology Education Council, reflecting both the external changes which meant that it was increasingly difficult to clearly differentiate the technician role, and the greater range of courses.

Other developments affected BTEC courses, with implications for the pattern of provision in the polytechnics which have yet to be fully developed. In the late 1980s, the advent of the National Council for Vocational Qualifications (NCVQ) set the scene for a rationalization of qualifications in the whole vocational sphere. NVQs were based on the idea of competence, which individuals would be able to demonstrate in a variety of ways and for which formal course provision might not be necessary. NVQs were introduced progressively from the lower levels and so their impact in the polytechnics was only just being felt as they became universities. BTEC became a prime mover in validating NVQ centres and courses, and in 1990 reached an agreement with NCVQ that ultimately all BTEC awards would lead to NVQs (BTEC, 1991). New General National Vocational Qualifications, underpinned by external testing, were developed with the intention of replacing all existing Diplomas and Certificates. However, this proved more complex than at first envisaged, with the proposed timetable for replacing First and National awards considerably modified, and the replacement of Higher Diplomas and Certificates postponed.

BTEC and its precursor bodies thus affected the development of courses in the polytechnics in important ways, but differing from CNAA. They were, as we have seen, more prescriptive on course content. In 1984 BTEC introduced a range of personal skills and qualities which it believed were as important at work as specialist knowledge and skills (BTEC, 1985). BTEC also took a more direct interest in the process of course delivery and monitoring the standard of assessment. With established principles of student-centred learning and in its role of designer of programmes and units, BTEC was concerned with the way in which its courses were being delivered. BTEC's detailed criteria for quality set out in 1988 required moderators to report on course planning and review mechanisms, resources, recruitment and equal opportunities, learning strategies, common skills, employer links as well as assessment strategies, procedures and standards. Over half of BTEC's income was devoted to quality assurance and control (BTEC, 1990). A monitoring exercise ensured, through making national and regional comparisons, that BTEC specifications were being met. By 1992, there were over 1,300 part-time moderators (Trainers Briefing Collection, 1992). Moderators underwent a rigorous selection process; in 1986–87 only three in ten applicants were successful (BTEC, 1987c); once appointed, moderators were required to attend annual training to ensure their competence. Moderators also provided an industrial perspective, with over a quarter drawn from industry, and BTEC actively sought to recruit more industry- or commercially-based moderators.

BTEC and its precursors were clearly set up to advance the quality of work-related education in a way that CNAA was not. To secure this, the Chairmen have been industrialists, and half the members of Council also came from industry or business. In validating courses the relevance to employers was of paramount importance; departments were judged on the quality of their industry links, unlike CNAA where, for example, research capacity was seen to underpin teaching competence. Considerable effort was made to establish the validity of BTEC courses for progression within education, and negotiate access to degree courses, but gaining recognition from professional bodies for entry and exemptions was at least as important; in 1992 BTEC could claim recognition of its awards by over 100 such bodies (Trainers Briefing Collection, 1992).

As the pressure from the polytechnics for increased autonomy grew, BTEC and CNAA privately discussed the possibility of merging. The talks came as a surprise to many in the polytechnics. CNAA was well into devolution of power and the Bird review was awaited, whilst BTEC had made no serious attempt to devolve its powers. The Chair-elect of CDP commented that BTEC had 'found it almost impossible to deal with polytechnics as well as smaller further education colleges' (Utley, 1990). The merger plans came to naught, but BTEC did take steps to recognize formally the experience and maturity that centres had developed. Joint validation procedures were developed in 1990 for polytechnic BTEC courses; their existing internal validation procedures would be employed, alongside a panel of polytechnic staff, employer representatives and BTEC nominees. By the time the polytechnics became universities, BTEC had concluded agreements with all of them to approve, deliver and award BTEC HNCs and HNDs on behalf of the Council, subject to its overall criteria for quality and relevance. Nevertheless, this still meant that, at sub-degree level, the emerging 'new' universities were under controls that had characterized their experience as polytechnics, whilst at degree level they were able to award their own qualifications, subject only to the (ostensibly at least) voluntary quality assurance and enhancement procedures of HEQC. Ironically, BTEC merged with the University of London examining board in 1995.

## Conclusion

The validation and quality assurance processes that the polytechnics developed as a result of their association with CNAA, and to a lesser extent with other bodies like BTEC, enabled them to achieve the growth of higher education provision, particularly degree courses, that had been the aim of the 1960s policies. Through BTEC they had at least maintained their sub-degree work. Their links with CNAA had enabled the polytechnics to achieve the educational innovation that was implicit in the policy, paradoxically by the involvement of academic conservatives and through bureaucratic procedures. They had moved from academic tutelage, subordinate to the universities for degree courses, to be 'self-critical academic communities' and this, with their own ambitions for university status, enabled them to achieve degree-awarding powers in the 1992 Act.

The polytechnics' relationship with CNAA was, nevertheless, always equivocal, often stormy and it offers lessons on the nature of academic quality assurance that, as yet, appear to be unheeded – a feature that characterized much of CNAA's achievement. According to Robinson (1995), CNAA was by far the most significant educational institution in Britain in the second half of the twentieth century, and it was awarding more degrees than all the British universities put together. Yet its foundation in 1964 had gone almost unnoticed and its demise in 1992 was barely regretted.

The passivity with which the abolition of CNAA was accepted arose from its own failings, but also from the failure of nearly all parties, not least the polytechnics, to recognize its benefits. CNAA suffered from an inevitable and fundamental structural problem: its very existence confirmed the status hierarchy in higher education between the universities and the rest. Although the polytechnics and other colleges were creating and running their own degree courses in a way that had never been available to the university colleges established throughout the century, they still did not award their own degrees. As CNAA accepted the arguments of the polytechnics for greater responsibility, it acknowledged a more elaborate hierarchy – university: polytechnic: college. So CNAA fostered ambitions for independence among polytechnics, and for polytechnic status among other colleges – and its own demise.

CNAA also created new orthodoxies and dependencies. Its organizational structure, as in any organization, reflected dominant educational views, mainly those of the polytechnics. Subjects were grouped in relatively conventional ways through the registry structure of CNAA; inter-faculty studies were always weak; there was, too, a division between teaching and research, with a separate committee for research degrees. Institutions, in turn, tended to mimic CNAA structures and processes. Polytechnics in particular established their faculty registries, validation procedures and research degree committees, as if trying to demonstrate that they could out-play CNAA at its own game – and on the whole they did. They imported CNAA regulations almost word for word when they became universities. To the unperceptive eye of government and its acolytes in HMI, CNAA was largely redundant.

There were paradoxes, too. As institutions gained increasing independence under CNAA, so CNAA regulations burgeoned to ensure that they conformed to CNAA principles. Independence under CNAA did not lead to the expected diminution of bureaucracy.

The diminishing role of CNAA in course validation and review left it marginalized, dealing mainly with approval of external examiners and with establishing a register of members available to act as external members of internal validation processes of accredited institutions. Only once in seven years was CNAA expected to review accreditation, and the polytechnics were reluctant to view this as other than a confirmation.

CNAA also operated on a periodic rather than continuing basis: validation, review and accreditation were events that took place at fixed intervals. CNAA concentrated on curriculum and infrastructure, rather than the student experience; it was HMI which evaluated this, and when evidence of weakness was found, it was easily seen as a failure of CNAA processes.

These problems of CNAA's operation obscured its benefits. The obvious successes of its history were neglected in the rush to independence of the polytechnics. Perhaps most important of all, CNAA's function in what became called 'quality enhancement' was overlooked, not only by the government, HMI and the institutions, but CNAA itself. Central to the CNAA's historic achievements had been its collegial processes. It was these that had facilitated the liberalization and innovation in higher education that took place in the polytechnics and other colleges. They involved more than the processes of peer review, important though these were. CNAA, quite unintentionally, created a vast national network of people and institutions disseminating its ethos and principles, and developing practice in its various subject areas. The huge numbers of people involved in CNAA in one way or another in its heyday in the 1980s illustrate the extent of this. Yet all this went largely unrecognized in CNAA, in the polytechnics, and in the Lindop, HMI and Bird Reports. Although CNAA established its Development Services Unit in 1981, using interest on the CNAA surplus, to provide research and to drive curriculum and other initiatives, CNAA itself had no policy about networking and no evaluation of its effectiveness took place. The Development Fund mainly supported research projects in institutions primarily for educational development initiatives and innovations aimed at securing improvements in the quality of course delivery. The Bird Report recommendations for a continuing existence of CNAA did not even mention CNAA's development or dissemination activity. Other government policies and wider political changes helped to demote CNAA. The increasingly competitive financial climate, as institutions vied with each other for students and funds, damaged collegiality (Pratt and Hillier, 1991). How could institutions disseminate their innovative strategies when their survival depended on a competitive edge? Thus, CNAA networks withered; as institutions gained accreditation, the CNAA subject registries were abolished as the need for them in validation diminished; members on the CNAA register had no central focus, because there were no subject boards; collegiality disappeared; only the bureaucracy was left.

# 7

# Funding

When the polytechnics were founded, it was a a time of relative prosperity for the public sector. Pratt (1989b) described this as 'the age of expansion'. Before long, they entered the more demanding 'age of constraint,' and later, 'the age of the entrepreneur'. The changes in financial circumstances affected not only the resources available to the polytechnics: the ways in which resources are allocated have a profound effect on the development of a policy. As financial constraint developed, the polytechnics were subject to repeated changes in funding mechanisms, affecting their educational development and their organizational cultures and the structures for managing, controlling and governing them.

## Funding policy

It could be said that the polytechnic policy was a financial device. Central to the policy was the notion of 'concentration' of resources. The 1966 White Paper referred to 'making the best use of resources'. It was phrases like these that led to worries that the policy was to offer 'higher education on the cheap,' though Robinson (1968) regarded this as a virtue. Since the task was to offer higher education to a much wider range of people, and resources were limited, higher education had to be cheaper, particularly in the universities.

In the early years, commentators like Lewis (1974) were able to write: 'Expenditure on education not only continues to rise year by year, but also accounts for an ever increasing share of the national product'. Expenditure on universities had risen by nearly 250 per cent in the eight years to 1967–68 and that on further education by 175 per cent.

Lewis also noted that resources were 'one of the few variables . . . that the Government can monitor and control . . .' and went on to ask how far they had been used as an instrument in the implementation of the polytechnic policy. It was clear that, at the time the polytechnics were being established, the answer was little if at all.

There was little guidance on the administration of resources in policy statements until after most of the polytechnics had been designated. It was assumed that the resources would be administered by the existing mechanisms for further education and that there was no need to significantly alter this, despite the creation of 30 major new institutions with a specific set of functions. These mechanisms followed a traditional public sector model, since polytechnics were local authority institutions; they were dependent upon the authorities for their funds, until 1988. They were thus subject to the constraints upon the authorities themselves, as public bodies, though their funding was complicated by arrangements to spread the recurrent costs of advanced further education between all the authorities.

## Capital funding

Capital funding was under the direct control of the Secretary of State through annual building programmes. Each year the Secretary of State invited proposal for buildings from local authorities for all their education provision, though there were separate programmes for further education and, from 1966–67, for the polytechnics. Each polytechnic or college had to work out plans for buildings and submit them to its local authority, which considered them alongside other bids, and in turn submitted them to the DES. If successful, the authority was granted a 'loan sanction' to borrow the money to build, though permission to start was also controlled by the DES. The authority was responsible for paying the interest charges on the debt, though this was chargeable to the AFE Pool (see below).

When the National Advisory Body for Local Authority Higher Education (NAB) was established in 1982, it was given responsibility for advising the government on capital spending, and later the Polytechnics and Colleges Funding Council (PCFC) allocated its own capital funds to polytechnics and other colleges (see below).

These arrangements differed significantly from those for the universities, which received their capital allocations as grants, and were not liable for interest charges. Moreover, the allocations were based on the quinquennial system then operating for university funding, not an annual programme in which changes to plans could be made at short notice. Nor were the universities competing directly with other parts of the education system, in the way that polytechnics were with LEAs' other education functions. As the Chair of one county council pointed out, the needs of 'glass and concrete towers of colleges' did not compare with primary schools still with external lavatories (Platt, 1976).

With its control over the amount and timing of the building programme, the Department had 'a very tight hold' (Lewis, 1974) on the polytechnics. The DES also controlled the detail of the plans through its guidance on the use of space and space norms. *Design Notes* published by the Department offered guidance on aspects of building and in 1972, *Design Note 8 Polytechnics:*

*Planning for Development* was published. Later design notes elaborated and updated this guidance for advanced further education and public sector higher education.

Given this capacity to influence polytechnic development, and a policy to establish a new and expanding sector of higher education, even if economies of scale were anticipated, substantial provision of new buildings and upgrading of existing accommodation might have been expected. Capital provision was one area where the government could promote the polytechnic policy. Yet the outcome of these funding mechanisms and government decisions about levels of funding was that the polytechnics, on the whole, did not fare well at first when it came to capital expenditure and the provision of new buildings. Lewis (1974) compared spending on buildings for the polytechnics and universities from 1967–68 to 1974–75 which showed the polytechnics received substantially less in most years. They averaged about £6m per year to 1972–73; the universities received around £28m. (Slightly different figures published by the Committee of Directors (CDP, 1974b) showed a similar disparity.) To take account of the disparity in size of the sectors at that stage, Lewis estimated capital costs per full-time place provided; this showed that in 1973–74 the cost per place in universities was £10,750 while that in polytechnics was £7,300. Lewis commented on the DES's lack of awareness of finance as an instrument of the polytechnic policy which this disparity revealed. It suggested that the polytechnics were not so much 'different from, but equal to' the universities, as different and poorer.

In subsequent years, the gap between the sectors appeared to diminish, although differences in the basis of the published figures make comparisons tentative. Table 7.1 shows that all capital spending in the polytechnics (including that on plant) increased steadily in the early 1970s, from about £15m in 1971–72 to about £35m in 1976–77. Spending on new construction rose from £7.5m to nearly £24m. There were subsequent fluctuations, with public expenditure constraints in the late 1970s, but the total rose again to around £40m in 1982–83. Spending on new construction hovered around £15m, apart from a sharp drop in 1983–84. These levels of spending were below those in the universities in the initial years, but the polytechnics appear to have survived the period of constraint better. The university figures for building works (Table 7.2) reached £30m in 1973–74, but after 1976–77 the figures are mostly below the new construction figures for polytechnics. It was in these years that the polytechnics were expanding student numbers despite restraints on recurrent expenditure, whilst the universities consolidated their numbers. Even so, the polytechnics felt that they were deprived on capital spending. In 1986, for example, NAB (see below) considered 53 building projects from polytechnics totalling £53m for a budget reported to be only £5m, while the universities were expected to receive £12m (Jobbins, 1986). In these later years, the universities' total capital spending still greatly exceeded that of the polytechnics, not least because of considerable increases in spending on equipment and furniture.

*Table 7.1* Local Education Authorities' gross capital expenditure on polytechnics (£ thousand)

| | *Acquisition of sites and properties* | *New construction and works* | *Plant, machinery and equipment* | *Vehicles* | *Other* | *Total* |
|---|---|---|---|---|---|---|
| 1971–72 | 950 | 7507 | 6573 | 1 | 8 | 15039 |
| 1972–73 | 946 | 9226 | 5241 | 6 | 51 | 15470 |
| 1973–74 | 1190 | 13615 | 6536 | 6 | 76 | 21423 |
| 1974–75 | 3638 | 13971 | 5896 | 5 | 3 | 23513 |
| 1975–76 | 5639 | 19972 | 7613 | 20 | 102 | 33346 |
| 1976–77 | 2944 | 23994 | 8082 | 23 | 0 | 35043 |
| 1977–78 | 1254 | 22032 | 10130 | 54 | 1 | 33471 |
| 1978–79 | 4404 | 15025 | 9832 | 66 | 0 | 29327 |
| 1979–80 | 1442 | 11973 | 9802 | 69 | 0 | 23286 |
| 1980–81 | 2579 | 18133 | 15145 | 74 | 4 | 35935 |
| 1981–82 | 731 | 18155 | 15198 | 47 | 9 | 34140 |
| 1982–83 | 744 | 13010 | 26211 | 127 | 7 | 40099 |
| 1983–84 | 2993 | 815 | 18383 | 87 | 12 | 22290 |
| 1984–85 | 4006 | 13882 | 18663 | 108 | 158 | 36817 |
| 1985–86 | 1080 | 15165 | 30 | 27932 | 26 | 44233 |
| 1986–87 | 1384 | 17623 | 25106 | 638 | 0 | 44751 |

*Source:* DES Statistics of Education, Finance and Awards.

In 1987–88 for example, the universities' total (for Great Britain, including teaching hospitals) at just over £120m was three times the polytechnic total. It is hard to avoid the conclusion that, even if the government was by now aware of the use of resources as an instrument of policy, its policy was not even-handed.

The deficiencies of the polytechnic building programme were revealed when PCFC was established and commissioned a Building Condition Survey of its institutions. It found that some £75m would be needed to make urgent repairs to comply with legal requirements. Even the Secretary of State admitted that its findings gave 'cause for concern' (Baker, 1989) and an increase in capital spending of 25 per cent over three years was promised. PCFC selected 14 major projects for evaluation and £16m was allocated for these Building Conditions Survey 'priority 1' projects; Lancashire, Leicester, Liverpool, Staffordshire and Sunderland polytechnics were amongst the beneficiaries. PCFC's capital allocations for 1990–91 totalled £98m.

There was more help for the polytechnics when it came to the detail of buildings and their management. With *Design Note 8* the newly-designated polytechnics moved into an entirely different world from the past. Previously, their new buildings had been designed under the provisions of *Building Bulletin 5* for further education colleges, written nearly two decades earlier. Burgess and Pratt (1970) had described this as a 'humdrum affair,' seeing further education as an extension of secondary schooling. It had no

*Table 7.2* Exchequer grant non-recurrent income in universities (Great Britain) (£ thousand)

| | *Equipment and furniture* | *Building works* | *Purchases sites and properties* | *Professional fees* | *Teaching hospitals* | *Total* |
|---|---|---|---|---|---|---|
| 1970–71 | 29355 | 25673 | 2050 | 4785 | 6600 | 68463 |
| 1971–72 | 29721 | 24664 | 1672 | 5172 | 10484 | 71713 |
| 1972–73 | 34560 | 26031 | 2039 | 5981 | 8043 | 76654 |
| 1973–74 | 41645 | 30926 | 2879 | 5243 | 8260 | 88953 |
| 1974–75 | 24885 | 28315 | 2562 | 4328 | 11289 | 71379 |
| 1975–76 | 47993 | 23751 | 1400 | 3358 | 15009 | 91511 |
| 1976–77 | 31600 | 18098 | 1656 | 3754 | 23960 | 79068 |
| 1977–78 | 25640 | 12846 | 1267 | 2059 | 16044 | 57856 |
| 1978–79 | 42177 | 12961 | 1090 | 2406 | 14402 | 73036 |
| 1979–80 | 55772 | 12234 | 1944 | 1987 | 16718 | 88655 |
| 1980–81 | 71883 | 14443 | 1541 | 2904 | 12763 | 103534 |
| 1981–82 | 76578 | 12136 | 52 | 2475 | 12186 | 103427 |
| 1982–83 | 83620 | 8634 | 2 | 1971 | 16611 | 110838 |
| 1983–84 | 89600 | 6086 | 198 | 1262 | 9305 | 106451 |
| 1984–85 | 91740 | 7234 | 322 | 2493 | 10947 | 112736 |
| 1985–86 | 94586 | 7616 | 176 | 1866 | 7110 | 111354 |
| 1986–87 | 119060 | 12320 | 320 | 2869 | 8353 | 142922 |
| 1987–88 | 102685 | 11445 | 682 | 1661 | 4134 | 120607 |
| 1988–89 | 121413 | 10340 | 13 | 3147 | 17731 | 152644 |
| 1989–90 | 115889 | 23721 | 109 | 4332 | 11183 | 155234 |
| 1990–91 | 121753 | 22509 | 413 | 3095 | 16563 | 164333 |
| 1991–92 | 119047 | 20588 | 23 | 3031 | 9352 | 152041 |

*Source*: UGC Statistics of Education; USR University Statistics, Finance.

statement of educational aims, and concentrated on space calculations. These centred around 'maximum student capacity' (the sum of seating capacities) regardless of use or kind of student, with the result that a college with 2,000 students might have staff rooms for only 20 of the perhaps 200 staff. Library space was allocated at 1.5 square feet per student – not enough room to stand.

*Design Note 8*, by contrast, started with an explicit statement of the academic, social and educational aims of the polytechnic policy. Total area requirements were based on projected full-time equivalent students and took account of usage rates and incorporated 'balance areas'. For a polytechnic anticipating substantial new building, it offered the prospect of provision appropriate to a comprehensive academic community. Further support for polytechnics came with the continuing publications of the DES's Architects and Building Branch (such as Kenny, 1977) on the utilization of accommodation in polytechnics.

For many polytechnics, however, as the size of the building programme suggested, there were few prospects of the provision implied by *Design Note 8*. Most were likely to remain in their existing buildings, which were often cramped. Burnip and Linsell (1985) concluded that polytechnics had less space per FTE in 1983–84 than in 1977–78. They estimated that the space deficit against *Design Note 8* norms was over 27,000 FTE places for the 30 polytechnics – nearly 1,000 places per polytechnic. Presaging PCFC's later survey, they estimated that up to £131m was needed to upgrade polytechnic buildings to new condition.

The *Design Note* was, however, disappointing when it came to the siting and location of polytechnics and their buildings. True, it stated that 'a polytechnic should remain as an integral part of the community' and that this might be 'better done by staying in the heart of an urban area – perhaps even [*sic*] on several sites'. But the *Design Note* appeared to fall into traditional assumptions about the nature of higher education provision, averring that a single site with room for expansion was 'clearly the most favourable situation to be in'. The model of the university campus, if only inadvertently, haunted the document.

There was, indeed, no basis for assuming that the single-site campus was the ideal for the polytechnics. Polytechnics were often scattered around constricted city centre sites. Only three polytechnics had open sites and only a dozen were on single sites. Brown (1971) had already argued that their dispersal meant that the polytechnics should be seen as the 'university of the suburbs'. He quoted the social goals of the Lancaster speech as implying that courses had to be at institutions local to students' work and homes. Robinson (1968), too, had seen polytechnics linked to further education and other community facilities such as health services and libraries. Pratt (1972) noted that the campus model had 'conspicuously failed, in the universities, to facilitate relationships with the community' and to encourage local or part-time students. Traditionally it had been the multi-site, urban technical colleges which had done this.

This thesis of the 'dispersed institution' of higher education was subsequently developed as part of an international study of higher education management through OECD (Organization for Economic Cooperation and Development) (Locke and Pratt, 1975, for example). Later amalgamations with colleges of education increased the number of polytechnics with multiple sites, but the creative use of multi-site locations never really became part of the polytechnic ideal. There were a number of reasons for this. It was widely held that multi-site operation was expensive, though research on this was inconclusive. Hempstock (nd) cited mid-1970s data showing that there was little relationship between running costs and size of institution or number of sites. O'Hara (1985a), however, claimed that about 12 per cent of net expenditure at North East London Polytechnic was attributable to its multi-authority control and multi-site operation. A Department of the Environment audit (DoE, 1983) noted that additional costs were incurred in multi-site operations through the need for additional site officers and duplication of library and other provision. Another reason for the reluctance to develop the dispersed polytechnic idea was revealed by Hempstock's study: staff and students surveyed in five polytechnics were overwhelmingly in favour of single-site operation, seeing this as a necessary condition for the 'mixing of minds' they valued. Hempstock saw the issue as one of 'the authorities' imposing their own organizational aspirations on students and staff. The opportunity to create a new physical form for higher education was submerged beneath traditional values. As Brown (1971) had put it, 'in an unequal system the deprived tend to formulate their goals in terms of the favoured'. The new polytechnics aspired to be campus universities, in building as in many other respects.

## Recurrent expenditure

The polytechnics were major educational institutions and their recurrent expenditure was substantial. Table 7.3 shows that it rose from nearly £100m in 1972–73 to nearly £700m by 1987–88; it was approaching £1 billion by the time they became universities (PCFC, 1991a). By 1991–92, the largest polytechnic (Manchester) received total public funding of over £47m and the smallest (Bournemouth) just exceeded £12m. Large though these figures are, they made only a small impression on total education spending. In 1972–73, polytechnics accounted for only 2 per cent of local authority expenditure on education in England and Wales (DES, 1975). By 1987–88, just before they left the local authority sector, gross expenditure on polytechnics in England, though higher, was still less than 5 per cent of (English) LEAs' gross education expenditure (DES, 1990b). Although polytechnics accounted for more than a quarter of all expenditure on the further education sector in 1972–73, spending on the other major colleges in the sector was more than double that of the polytechnics. Despite the expansion of the polytechnics, their share of total spending on the local authority further and higher education sector fell to only 20 per cent by 1987–88 (DES 1990b). Spending on polytechnics was also substantially less than that on the universities; in 1972–73 the total recurrent expenditure of universities in Great Britain was roughly four times that of the polytechnics in England and Wales (Tables 7.3 and 7.4) and it remained in this proportion to 1987–88.

Table 7.3 also shows that the major item of spending in the polytechnics was on salaries, and that the distribution of costs throughout their years as local authority institutions remained remarkably constant. There were significant differences between institutions, and particular concern about variations in unit costs. The data here were notoriously unreliable, depending as they did on the accounting conventions of different institutions and authorities. It was clear that there were substantial cost differences between institutions (DoE, 1983), partly explained by variations in local conditions of service, by physical circumstances and geography (London institutions paying London weightings on salaries) but mainly reflecting student : staff

*Table 7.3* **Recurrent expenditure on polytechnics (£ thousand)**

| | *Employees* | % | *Premises and fixed plant* | % | *Supplies and services* | % | *Transport and movable* | % | *Establishment expenses* | % | *Other* | % | *Total* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1971–72 | 57901 | | 8834 | | 8191 | | | | 2563 | | 1873 | | 79362 |
| 1972–73 | 70873 | 72.6 | 10850 | 11.1 | 10357 | 10.6 | 145 | 0.1 | 3043 | 3.1 | 2338 | 2.4 | 97606 |
| 1973–74 | 80751 | 72.7 | 11721 | 10.6 | 11950 | 10.8 | 186 | 0.2 | 3640 | 3.3 | 2839 | 2.6 | 111087 |
| 1974–75 | 116307 | 75.5 | 15553 | 10.1 | 15095 | 9.8 | 404 | 0.3 | 3968 | 2.6 | 2651 | 1.7 | 153978 |
| 1975–76 | 155577 | 73.7 | 23580 | 11.2 | 20995 | 9.9 | 1150 | 0.5 | 6325 | 3.0 | 3404 | 1.6 | 211031 |
| 1976–77 | 181600 | 73.1 | 28150 | 11.3 | 25902 | 10.4 | 693 | 0.3 | 7557 | 3.0 | 4519 | 1.8 | 248421 |
| 1977–78 | 202245 | 71.6 | 34155 | 12.1 | 30087 | 10.7 | 1124 | 0.4 | 9435 | 3.3 | 5293 | 1.9 | 282339 |
| 1978–79 | 222442 | 73.2 | 30957 | 10.2 | 30328 | 10.0 | 1823 | 0.6 | 12279 | 4.0 | 5859 | 1.9 | 303688 |
| 1979–80 | 257779 | 72.5 | 39431 | 11.1 | 35585 | 10.0 | 2389 | 0.7 | 13034 | 3.7 | 7210 | 2.0 | 355428 |
| 1980–81 | 325050 | 75.6 | 44913 | 10.4 | 34548 | 8.0 | 2377 | 0.6 | 14276 | 3.3 | 8842 | 2.1 | 430006 |
| 1981–82 | 353763 | 75.1 | 50345 | 10.7 | 39489 | 8.4 | 2652 | 0.6 | 16790 | 3.6 | 8086 | 1.7 | 471125 |
| 1982–83 | 378281 | 74.1 | 56164 | 11.0 | 43435 | 8.5 | 3303 | 0.6 | 19613 | 3.8 | 9421 | 1.8 | 510217 |
| 1983–84 | 397295 | 74.7 | 54900 | 10.3 | 44288 | 8.3 | 4302 | 0.8 | 20801 | 3.9 | 10415 | 2.0 | 532001 |
| 1984–85 | 413867 | 73.7 | 56983 | 10.2 | 47139 | 8.4 | 4340 | 0.8 | 22587 | 4.0 | 16286 | 2.9 | 561202 |
| 1985–86 | 434454 | 72.8 | 61758 | 10.4 | 53420 | 9.0 | 4742 | 0.8 | 25142 | 4.2 | 17050 | 2.9 | 596566 |
| 1986–87 | 470778 | 72.7 | 65874 | 10.2 | 59617 | 9.2 | 5175 | 0.8 | 26960 | 4.2 | 19345 | 3.0 | 647749 |
| 1987–88 | 510569 | 73.1 | 70754 | 10.1 | 72545 | 10.4 | 6375 | 0.9 | 36244 | 5.2 | 1510 | 0.2 | 697997 |

*Source:* DES Statistics of Education, Finance and Awards.

ratios. In 1987–88, for example, DES figures (DES, 1990b) showed a range of gross unit costs in polytechnics from £3,226 (Birmingham) to £5,132 (Hatfield). These variations were a matter of concern to the government throughout the polytechnics' history and diminishing them, as we shall see, became a major object of funding policy.

## The AFE Pool

Formal responsibility for recurrent expenditure in the polytechnics rested with the local authority maintaining or aiding the institution. Because advanced further education provision was unevenly distributed amongst authorities, the Advanced Further Education (AFE) Pool had been established in 1958 to spread the cost between all local authorities. As further education and particularly advanced work expanded, increasing numbers of students were studying in authorities away from home; the cost of their study had been recouped by the providing authority from the student's home authority, but this system was too cumbersome to cope with high numbers. Local authorities with colleges complained that they were bearing an unfair burden and paying for the cost of other authorities' students. In 1951 the government introduced a 75 per cent grant for advanced work (on the assumption that 25 per cent of students would be local), but this too failed to match the costs of the providing authorities, and the system of 'pooling' was introduced.

Under pooling arrangements, authorities providing advanced further education calculated the cost of this by a complicated proportioning of college costs based on timetabled hours of advanced and non-advanced work (since costs were not otherwise separable) and reclaimed this from the pool. All local authorities contributed to the pool through a formula which, initially, was based half on school population (as a proxy for the take up of AFE by their students) and half on non-domestic rateable value (a measure of industrial demand for education and also of the LEA's wealth). The pool was administered by a Pooling Committee, consisting mainly of LEA finance officers, in the Department of Education and Science.

The pooling arrangements were widely criticized even before the polytechnics were established. It was held that providing authorities could expand their colleges at no cost to themselves, and that there was a net shift of resources from the north to the south (Lewis and Allemano, 1972). There was something in these criticisms, though expansion was not as uncontrolled as it seemed. The overall level of local authority spending was controlled through the normal public spending processes; the government agreed with the local authorities what this total would be. But if AFE expanded beyond what had been anticipated, the AFE Pool was effectively a 'top-slice' of LEA spending. The main problem was simply that the pool separated the burden of cost from control. Lewis and Allemano (1972) showed that providing authorities were probably bearing an unfair share of the costs, particularly those with large amounts of advanced work, since the system underestimated its costs. They showed also that there were marked disparities in contributions from authorities if the number of students entering AFE from each authority was estimated. They concluded that the use of non-domestic rateable value as a basis of contributions meant that industrial, working-class areas subsidized middle-class authorities. Later, in 1975, some of the criticism seemed to have been taken into account when the basis of pool contributions was changed to 69 per cent school population and 31 per cent non-domestic rateable value, though the reason for the change was the combination of the AFE and teacher training pools, which implied that school population had a greater significance (Knight, 1978).

These features and criticisms of the pool had contradictory implications for the polytechnics. The pool was undoubtedly an effective mechanism for encouraging expansion of advanced work; authorities with polytechnics were not, in the main, hindered by the impact of expansion on their own finances. On the other hand, the complaints of other authorities became more vigorous the greater the expansion.

The pooling arrangements also offered the government little control over the direction of funding. The pool was merely the retrospective total of individual LEA decisions, and its distribution between polytechnics and colleges and within each sub-sector was not under the control of the Pooling Committee. It became increasingly clear that the government felt it needed more power to determine this distribution.

The government was not without powers in this respect. Whilst local authorities were responsible under the 1944 Education Act for the provision of further education in their area, there were coordinating regional advisory councils, and the Secretary of State controlled the distribution of much AFE through administrative approval of courses.

The ten regional advisory councils (RACs) in England (and in Wales the Welsh Joint Education Committee) were set up by voluntary cooperation between local authorities in 1947–48. Their functions included identification of deficiencies in provision, avoidance of duplication, cooperation with industry and other providers, conducting examinations and awarding certificates and often running short courses (Cantor and Roberts, 1986). Their meetings were attended by the senior HMI for the region, the regional staff inspector (RSI), and they had an important part in the formal approval process of advanced courses, although they were widely criticized for 'horse trading'. Until 1982 all proposals for advanced courses had to be submitted to the RAC. Those for full-time courses, if approved, faced a further stage of submission to the Secretary of State for approval under further education Regulations. Part-time courses were approved by the RAC itself. The system was meant to ensure that courses were provided 'only if there was a demonstrable need and sufficient students and facilities to make them viable' (Cantor and Roberts, 1986); academic issues were dealt with by the separate processes of academic validation.

For institutions like the polytechnics, the processes were labyrinthine and tiresome. Every course had to have LEA support, individual RAC and, for full-time courses, DES approval, in addition to academic approval through the CNAA or similar body. Nor were the various agencies always in accord. Robinson (1968) described the 'complexity of this maze' making the initiation of new courses 'a most haphazard business' and essayed the possibility that 'an inept or unlucky principal may find himself with the equipment for course X, the staff for course Y and the approval to run course Z'.

The system did mean that the government had power, albeit indirect, to control the pattern of provision in the polytechnics (and other colleges). It was limited, and reactive rather than proactive, relying on institutions to take the initiative in making course proposals, but it had potential that was neglected. Pratt and Burgess (1974) noted that the RACs could have played a role in developing a national development policy for the polytechnics, and lamented the failure to do so: 'to look for any considerations beyond the hand-to-mouth and the arbitrary is a waste of time'. Only when financial constraint became central to policy making in the early 1980s was the role of the RACs enhanced, but then they became handmaidens of financial control, not educational development.

The concerns about the operation of the AFE Pool and control of the development of higher education in the public sector were inseparable from the responsibilities of the local authorities, and they led to a major review of the whole system in the late 1970s. At this time, too, the government was exercised by the possibility of establishing some form of devolution to regional bodies in England, as well as to Wales and Scotland. In 1975 CLEA submitted to the Department proposals for a system of further education advisory councils in the regions. The Layfield Report on Local Government Finance (Layfield, 1976) had also commented that the pooling arrangements gave providing authorities 'an effective power to precept on all other education authorities' which it regarded as contrary to principles of accountability. It became clear that a comprehensive review of arrangements for the management of higher education in the maintained sector was required. On 7 February 1977 the Secretary of State, Shirley Williams, established a working party under the chairmanship of Gordon Oakes, 'To consider measures to improve the system of management and control of higher education in the maintained sector in England and Wales' as well as 'its better coordination' with the universities and, 'in the light of developments in relation to devolution and local authority finance, what regional and national machinery might be established for these purposes' (Oakes, 1978).

The Oakes Group agreed that 'whatever defects there may be in the present arrangements for providing maintained higher education, the system has demonstrated remarkable resilience, adaptability, capacity for growth and ability to raise its academic standards'. It therefore preferred 'to proceed by evolution rather than revolution' and 'where possible, to build on what exists rather than propose quite new arrangements'. The Group's recommendations reflected a desire to see a large measure of responsibility and initiative at local level. Its central recommendation, however, was for a new National Body to 'advise the Secretary of State and the local authority associations on the total provision which should be made for [higher education in the public sector]'. The National Body would 'issue guidance on the programmes and estimates submitted to it' by authorities or institutions and 'allocate funds for recurrent expenditure' and advise on the allocation of capital expenditure. The Report's recommendations for establishing regional AFE Councils for England were incorporated in a Bill in November 1978, but this fell when the government changed in May 1979. With the change of government, things altered dramatically.

The management of public sector higher education was not on the priority list of the new government. But, as Jones (1984) describes, 'the list was very rapidly added to when ministers were made aware of one feature of arrangements then in being: the theoretically unlimited commitment of resources for AFE through the AFE Pool'. Of course there were limitations, imposed by LEAs themselves. At Birmingham in 1979, for example, the LEA insisted that the Polytechnic's budget be drawn up on a no-growth basis, despite a CNAA report threatening course closures if extra resources were not found (Flather, 1980a). But by December 1979, the open-ended nature of the pool had gone: the government decided to impose a cash limit upon the larger part of it from 1980–81. In the jargon of the time, the pool was capped.

Capping transformed the pool overnight and it had major implications for the AFE sector and for the polytechnics within it. First it facilitated financial constraint. The AFE Pool total for 1980–81 was fixed at £375m (at 1979 prices). This precipitated crises at a number of polytechnics. Sheffield announced plans in 1980 to cut 40 staff in response to a 2 per cent budget cut. At North East London, there were plans to withdraw from one of its three main sites and close departments in the face of an anticipated £3m budget cut and the possible loss of 240 teaching posts. At Leeds, envious comparisons were made with the size of the adjacent University's budget, more than twice that of the Polytechnic for the same number of enrolments (Nuttgens, 1982).

Second, capping the pool meant that decisions on spending taken in the past at LEA level now became effectively the subject of central control. This raised a further set of problems. Once the pool total was fixed, there had to be a method of deciding, in advance, on the allocation of funds to individual institutions. Whilst it would not be true to say that this came as a surprise to the DES (though it seemed like that to many outside), it was the case that, in the words of a senior official, the issue had not had 'a lot of high level attention'. Government sought a decision framework or yardstick with which to compare institutional spending. Initially, the allocations for the two financial years 1980–82 involved formulae largely based on past expenditure levels, which were widely regarded as unsatisfactory (Cane and Seavor, 1980; Locke *et al.*, 1980b; Knight, 1981). In 1982–83 a unit cost method was used (DES, 1981a) and the principles of this method formed the basis for resource allocation for subsequent years.

Although the larger part of the pool was capped, there were certain expenditures which could not be. These remained within 'open' pools, including the capital-related pool (for expenditure on loan charges, rents and leases, etc.), two pools for premature retirement schemes (one of which became closed in 1985), the 'no area pool' (for students not the responsibility of any LEA) and a pool for in-service training (abolished in 1987–88). Institutions and authorities obviously had an incentive to ensure that maximum expenditure was allocated to these pools.

## The National Advisory Body

Capping the pool had more than financial ramifications. It obliged the government to seek institutional as well as financial changes. As Jones (1984) put it, 'the realisation that limiting the size of the Pool created an obligation to consider its distribution was . . . a significant element in inducing Ministers to recognise that AFE had, from a national point of view, a management problem'. In autumn 1980, in one senior official's view, education ministers were ready to take the polytechnics away from local authority control. The leak of a document to the press in February 1981 revealed that the wider political balance was not on the government's side. The Cabinet was divided and ministers like Sir Keith Joseph were nervous of centralization of power. In 1981 discussion was initiated on long-term arrangements for a 'central focus' to 'oversee the financing and management of higher education outside the universities' (DES, 1981b). Two different models were proposed; Model A was based on proposals from CLEA and would work through existing pooling arrangements with representation of providers in the sector, with a local authority majority; Model B would allocate central funds to a new sector no longer under LEA control (DES, 1981b). Since the message from the Cabinet was that local authorities were going to keep polytechnics, the task for the DES was to make this work. After much machination (recorded in detail by Jones, 1984), arrangements were made to establish the National Advisory Body for Local Authority Higher Education (NAB) in England as an 'interim' measure. It started work at the beginning of 1982. From then on, the AFE Pool was allocated on the advice of NAB. In its initial, interim form, NAB's remit covered only institutions maintained by local education authorities; later this was widened to include voluntary colleges. Its title was altered to the National Advisory Body for Public Sector Higher Education to reflect its wider role. Later a Welsh Advisory Board (WAB) was established to perform a similar function for the Polytechnic of Wales and other Welsh colleges.

NAB had a cumbersome three-tier structure reflecting the complexities of the public sector system. The top tier was a Committee chaired by the junior minister responsible for higher education and consisting of eight elected members of local authorities appointed by the local authority associations. It was responsible for final decisions on the advice to the Minister. The main debates took place in the Board, whose chairman was appointed by the Secretary of State, and which consisted of about 20 members nominated by the various interests in the sector including institutions, teacher unions, local authorities, etc. The third tier was a range of sub-committees and subject boards with other members from the system and outside it.

Formally NAB was responsible for advising the Secretary of State on the apportionment of resources from the AFE Pool and the academic provision to be made by each institution. Additional areas of responsibility included, *pace* the Oakes Report, offering advice on the allocation of resources for capital spending, the approval of advanced courses, coordination of provision both within the public sector and between the public and university sectors, and monitoring of the implementation of policy decisions taken by the Secretary of State in the light of the advice offered. The creation of NAB brought together, at last, funding decisions and the system of course approval.

## *NAB funding methodology*

NAB assumed responsibility for advising on the distribution of the AFE Pool for 1983–84. The method initially adopted represented a continuation of the unit funding approach first introduced the previous year, albeit with a number of refinements. For the 1984–85 allocation, however, NAB conducted its first major planning exercise; this was a watershed in English public sector higher education (PSHE). It marked a fundamental change to a system of centralized planning and overall control of PSHE and established the principles of the funding methodology which was to affect polytechnics until their independence from local authorities in 1989. It introduced a system of considerable complexity, which needs to be set out in some detail.

NAB faced a number of problems. First was that of financial constraint. The annual expenditure targets for higher education had been progressively constrained. The process began in the early 1970s, though few noticed its significance at the time, with the 1972 White Paper *Education: A Framework for Expansion* (DES, 1972). A year later, the 1973 public expenditure White Paper proposed reductions in recurrent and capital spending. Between 1975–76 and 1978–79, despite the impression given by the incoming government, spending per full-time advanced student in polytechnics had declined by some 15 per cent (DES, *c.*1980). After the election of a Conservative government in 1979, further constraint presaged losses, according to one commentator, of 10,000 staff, representing one in six teaching posts in higher education, together with a loss of some 30,000 student places and a drop in the age participation rate (Ashworth, 1983). The real value of the AFE Pool was expected to diminish by about 10 per cent over the two years to 1984–85. How to distribute this diminished sum to a complex system of

## *Table 7.4* University recurrent expenditure: Great Britain (£ thousands)

| | *Teaching and research* | | % | *Academic services* | % | *Equipment and furniture* | % | *General education expenditure* | % | *Admin* | % | *Maintenance premise* | % | *Student welfare amenities* | % | *Misc* | % | *Capital from income* | % | *Total expenditure* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1970–71 | 198687 | | 63.3 | 21295 | 6.8 | | | 7467 | 2.4 | 21303 | 6.8 | 43520 | 13.9 | 5091 | 1.6 | 13326 | 4.2 | 3108 | 1.0 | 313797 |
| 1971–72 | 225855 | | 63.9 | 25504 | 7.2 | | | 9721 | 2.7 | 24557 | 6.9 | 49885 | 14.1 | 5598 | 1.6 | 9690 | 2.7 | 2911 | 0.8 | 353721 |
| 1972–73 | 256060 | | 64.1 | 29944 | 7.5 | | | 10506 | 2.6 | 27810 | 7.0 | 56359 | 14.1 | 6536 | 1.6 | 8411 | 2.1 | 3752 | 0.9 | 399378 |
| 1973–74 | 287001 | | 63.6 | 35621 | 7.9 | | | 11833 | 2.6 | 32391 | 7.2 | 64242 | 14.2 | 8345 | 1.9 | 5660 | 1.3 | 5925 | 1.3 | 451018 |
| 1974–75 | 351257 | | 62.9 | 42252 | 7.6 | | | 13134 | 2.4 | 36665 | 6.6 | 89788 | 16.1 | 11147 | 2.0 | 6368 | 1.1 | 8153 | 1.5 | 558764 |
| 1975–76 | 432631 | | 62.2 | 54605 | 7.8 | | | 16209 | 2.3 | 45564 | 6.6 | 115114 | 16.5 | 12510 | 1.8 | 7954 | 1.1 | 11022 | 1.6 | 695609 |
| 1976–77 | 478757 | | 60.9 | 63291 | 8.0 | | | 18995 | 2.4 | 50948 | 6.5 | 134173 | 17.1 | 13003 | 1.7 | 10383 | 1.3 | 17225 | 2.2 | 786775 |
| 1977–78 | 532107 | | 60.8 | 71302 | 8.1 | | | 22378 | 2.6 | 56120 | 6.4 | 151149 | 17.3 | 13706 | 1.6 | 12731 | 1.5 | 16006 | 1.8 | 875499 |
| | *Departmental General funds* | *Specific funds* | | | | | | | | | | | | | | | | | | |
| 1978–79 | 476240 | 149285 | 61.0 | 82367 | 8.0 | | | 25182 | 2.5 | 64867 | 6.3 | 175262 | 17.1 | 16195 | 1.6 | 15303 | 1.5 | 20003 | 2.0 | 1025604 |
| 1979–80 | 579694 | 196480 | 62.0 | 97901 | 7.8 | | | 28610 | 2.3 | 77130 | 6.2 | 209152 | 16.7 | 20447 | 1.6 | 18788 | 1.5 | 24154 | 1.9 | 1252356 |
| 1980–81 | 740397 | 234084 | 63.0 | 120328 | 7.8 | | | 33579 | 2.2 | 95129 | 6.1 | 252605 | 16.3 | 24408 | 1.6 | 23789 | 1.5 | 23314 | 1.5 | 1547633 |
| 1981–82 | 768009 | 253707 | 61.0 | 124867 | 7.5 | | | 41098 | 2.5 | 95649 | 5.7 | 275221 | 16.4 | 42297 | 2.5 | 51265 | 3.1 | 21833 | 1.3 | 1673946 |
| 1982–83 | 789786 | 297412 | 59.3 | 132580 | 7.2 | | | 43721 | 2.4 | 102326 | 5.6 | 295735 | 16.1 | 44317 | 2.4 | 89598 | 4.9 | 37540 | 2.0 | 1833015 |
| 1983–84 | 841916 | 346273 | 60.7 | 142676 | 7.3 | | | 48066 | 2.5 | 111690 | 5.7 | 310337 | 15.8 | 45611 | 2.3 | 71643 | 3.7 | 40095 | 2.0 | 1958307 |
| 1984–85 | 892076 | 408465 | 61.3 | 150759 | 7.1 | | | 46458 | 2.2 | 118231 | 5.6 | 331787 | 15.6 | 47646 | 2.2 | 78713 | 3.7 | 48731 | 2.3 | 2122866 |
| 1985–86 | 967216 | 475120 | 60.5 | 162723 | 6.8 | 110275 | 4.6 | 51355 | 2.2 | 129241 | 5.4 | 353413 | 14.8 | 49731 | 2.1 | 44973 | 1.9 | 40000 | 1.7 | 2384047 |
| 1986–87 | 1037297 | 559211 | 62.2 | 171296 | 6.7 | 111891 | 4.4 | 55277 | 2.2 | 140194 | 5.5 | 351788 | 13.7 | 52060 | 2.0 | 44845 | 1.7 | 44028 | 1.7 | 2567887 |
| 1987–88 | 1118494 | 618988 | 61.9 | 183843 | 6.6 | 121541 | 4.3 | 61652 | 2.2 | 153763 | 5.5 | 374549 | 13.3 | 55021 | 2.0 | 68152 | 2.4 | 49862 | 1.8 | 2805865 |
| 1988–89 | 1206755 | 736558 | 63.2 | 200249 | 6.5 | 139544 | 4.5 | 65484 | 2.1 | 172864 | 5.6 | 389285 | 12.7 | 58229 | 1.9 | 108189 | 3.5 | | | 3077157 |
| 1989–90 | 1423409 | 799501 | 57.8 | 225313 | 5.9 | 161414 | 4.2 | 92483 | 2.4 | 198126 | 5.2 | 415590 | 10.8 | 326573 | 8.5 | 202310 | 5.3 | | | 3844719 |
| 1990–91 | 1586636 | 920632 | 59.4 | 244814 | 5.8 | 160034 | 3.8 | 106467 | 2.5 | 220669 | 5.2 | 413048 | 9.8 | 369041 | 8.7 | 195000 | 4.6 | | | 4218141 |
| 1991–92 | 1763134 | 987420 | 59.9 | 263507 | 5.7 | 172493 | 3.8 | 124494 | 2.7 | 244118 | 5.3 | 446045 | 9.7 | 407225 | 8.9 | 182986 | 4.0 | | | 4591422 |

*Source:* University Grants Committee: Statistics of Education, Universities; University Statistical Record, University Statistics, Volume 3 Finance
*Note:* From 1989–90 'student welfare and amenities' includes the full cost of residences and catering operations

polytechnics and colleges was the immediate problem facing NAB in its planning exercise.

A feature of the first NAB planning exercise was the speed with which it was conducted: less than 18 months elapsed between the notification to the institutions of the decision to hold the exercise and its formal completion; the exercise proper lasted just over 14 months. In July 1982 a letter outlining its timing and stages was sent to the institutions and authorities. Institutions would be required to submit plans on different hypothetical levels of expenditure for 1984–85, paying regard to the need to balance a number of considerations – of access and the unit of resource, level and mode of study, and the speed with which shifts in provision could be effected. An indication was given of special status to be accorded to sub-degree level and part-time provision. On 30 September 1982 another letter set in train the exercise proper by inviting institutions to draw up plans for their AFE work in 1984–85 in 14 programme areas, to be submitted to the LEAs by the end of December and on to NAB. The letter asked institutions to specify those programme areas regarded as being the highest priority. A further letter dispatched on the same date to the LEAs asked them to amend institutions' plans where appropriate. The division of courses into 14 programme areas created considerable problems for institutions, especially those with modular or interdisciplinary courses. There were negotiations between NAB and the institutions on the correct classification of various courses.

After receiving institutions' plans via LEAs, NAB notified the institutions in August 1983 of 'indicative' student target totals (expressed as full-time equivalents) by programme for 1984–85 and an 'indicative net pool allocation figure' derived from the target enrolments. It emphasized that the figures were tentative and that no final decision on the funding methodology had been taken. The proposed targets reflected advice given to NAB by the Secretary of State in February 1983 on the priority that he hoped would be given to scientific and technological provision of value to industry. The indicative allocation revealed some of the problems faced by NAB of reconciling conflicting criteria, particularly of access, whilst maintaining, as far as possible, the unit of resource. At an early stage of the exercise it was accepted by NAB that access was to be the overriding consideration and that expenditure per student would have to fall. Unease concerning this trade-off continued and following a meeting with the Secretary of State, it was announced in October 1983 that an additional £20m would be made available to supplement the Pool 'quantum'.

On 9 December 1983, NAB published its advice to the Secretary of State (NAB, 1983) and notified the institutions of final target student enrolments for 1984–85 by programme; implied first-year student numbers by programme; maxima for the institution as a whole for the number of students on first and higher degree courses and of full-time and sandwich students; and the allocation of funding from the capped AFE Pool as recommended to the Secretary of State. Its advice stressed that all of the figures were to be regarded as targets rather than fixed limits. Nevertheless the establishment of maxima for first and higher degree work and for full-time and sandwich students was considered essential to protect provision for sub-degree level and part-time students. Institutions were advised that NAB expected any deviation from targets to favour sub-degree level and part-time provision.

NAB had attempted to produce a distribution which penalized high-cost institutions by cutting the average unit of resource, and rewarded those institutions regarded as efficient by maintaining and, in some instances, increasing their funding. At the same time, it related funding to planned target numbers and mix of students. As Pratt and Silverman (1988) put it, deciding the pattern of provision in terms of target student numbers is complicated enough; allocating resources from the AFE Pool to institutions to support this – and to conform to further criteria – is quite another matter. During the course of its deliberations NAB had examined and discarded three distinct funding methodologies.

The basis of the chosen methodology was each institution's target student numbers. These were derived by dividing the national aggregate enrolment (260,314) which had been determined by NAB, broadly in proportion to the institutions' bids. Institutions got a share of the planned total based on their ambitions. 'Programme weights' were then applied to the institutions' targets to weight them by subject area, producing a weighted target enrolment figure for each institution.

The programme weights were derived from an exercise conducted for NAB by HMI. Briefly, this identified HMI's view of 'best practice' student: staff ratios for the programme areas (they ranged from nine in Music to 15 in Humanities) and related these to teaching staff costs. Three other elements identified cost factors for non-academic staff and other recurrent costs of teaching. When these factors were applied to the programme areas, the cheapest was Humanities which was given a weight of 1.0 and the other programmes were then scaled relative to this, up to 1.9 for Music. Institutions then received a fixed cost per weighted student. The whole complicated exercise was, in fact, a way of producing different units of resource for programme areas. A music student simply generated 90 per cent more resources than a humanities student.

There was a further complication, of particular significance for the polytechnics. Different kinds of institutions received differing amounts per weighted student. The pool 'quantum' was divided into four 'subquanta' – for four specialist 'monotechnic' colleges , polytechnics, and two categories of other maintained establishments (OMEs), major and minor – so as to broadly maintain the proportion of the pool received by each category in 1983–84. This meant that the polytechnics' 'unit of resource' was at £1,477, higher than that of major and minor OMEs at £1,257 and £1,179 respectively. Within the AFE sector, resources were being used to support polytechnics, much to the chagrin of the cheaper and apparently more efficient OMEs.

The complications of the system have not yet been exhausted. Two 'damping' mechanisms were introduced to reduce year-on-year changes to manageable proportions. The allocation produced so far was 'moderated'. Where the allocation was greater than the 1983–84 figure the increase was halved; where it was less the loss was halved. However, it had also been decided that no institution should be subject to a cut in allocation greater than 5 per cent in cash terms, a process called 'mitigation'. When these institutions' allocations were made up to this level, the allocations of all other institutions were scaled down to ensure that the total remained within the pool quantum.

Finally a minimum net unit of resource of £1,250 was set for polytechnics and major colleges because the previous stages of the process had the effect of shifting resources towards the more expensive institutions and in some instances moderated allocations had fallen below this minimum. Allocations for these institutions were increased and those to all other major providers scaled down, again to contain the total within the pool quantum.

The outcomes of the 1984–85 planning exercise implied considerable change in the pattern of provision. The total of planned enrolments represented an increase of 7.5 per cent on the 1982–83 enrolments, despite the 10 per cent cut in resources. The distribution of target enrolments by programmes was the area where the most marked changes were found. Overall student numbers were planned to grow most in Mathematics and Computer Studies, Agriculture, Forestry and Veterinary Studies, Other Technology and Manufacture and Music, Drama and Visual Arts. Only one programme (Humanities), was planned to shrink absolutely, by 2 per cent. However, these changes meant that the distribution of first-year enrolments (full-time and sandwich students only) was planned to change much more severely. Mathematics and Computing was planned to expand by 47 per cent, Engineering by 15 per cent. At the other end of the scale, first-year enrolments in Humanities were planned to fall by 18 per cent.

The overall effect of the NAB funding methodology was that allocations to institutions were determined by the sub-sector in which they were located, their NAB target student enrolments and programme mix and their historic pattern of expenditure and enrolments. No two institutions were entirely alike in the impact of these factors and there were considerable variations both in 1984–85 allocations and in year-on-year changes. For the polytechnics, the outcome was an average increase in cash terms over 1983–84 of 3.6 per cent, but a range from a 5 per cent decrease (at North East London Polytechnic) to a 16 per cent increase (at Liverpool).

The planning exercise typified a number of the financial and managerial features of the new environment in which the polytechnics and colleges now operated. Funding was broadly on the basis of subject-weighted student numbers. Institutions with high unit costs received allocations which progressively brought them towards the norm. National priorities for kinds of courses or students were (to varying extents) reflected in funding decisions. But despite the apparent possibility of opting for fewer students at higher funding levels or more at lower, the system progressively squeezed the unit of resource and increased student : staff ratios. The basic features of the 1984–85 NAB funding methodology were quickly established as the 'ground rules' of the sector (O'Hara, 1988).

In subsequent years, there were changes of detail. The base unit of resource was reduced, implying even higher SSRs. Of particular significance to the polytechnics, in 1986–87, the sub-quantum method of funding was dropped. The principle was now similar funding for similar work. Since a single move to this would have meant a substantial shift of resources away from the polytechnics and other major providers, a two-stage process was introduced, in which 79 per cent of the pool was allocated on this principle, the rest by reference to AFE provision as a proportion of the total provision in an institution. This tended to favour the larger providers like polytechnics.

There were further developments. NAB decided, after several years doing the reverse, to protect the 'unit of resource' which implied that student number targets had to be substantially reduced, by up to 17 per cent in 1986–87 (O'Hara, 1988). The situation was redeemed only when the Secretary of State increased the pool total by some 8 per cent.

A second planning exercise was conducted for 1987–88, and it benefited from the experience of 1984–85. Institutions were given a longer time-scale to prepare, and the prioritization of 1984–85 was abandoned. On the other hand, complexity was increased by raising the number of programme areas to 19. The 1987–88 exercise was, like the 1984–85 allocation, controversial. NAB's initial proposals were announced in April 1986. Degree course numbers were proposed to decline by nearly 6 per cent, with the highest cuts in humanities and social sciences. Although the polytechnics were not to fare worse than other institutions overall, huge cuts were anticipated: all humanities were to go at Newcastle and Brighton, fine art to close at Leeds and engineering to close at Wolverhampton (O'Leary, 1986a). NAB warned that 9,000 students would be turned away to meet the spending targets set by the government, though the Secretary of State responded that this was because of high pay awards to staff (Jobbins and O'Leary, 1986). At one point the future of eight polytechnics or 15 colleges was thought to be in jeopardy (O'Leary, 1986b). In the event, further funds were found for the AFE Pool, though in September 1986 NAB still anticipated closures of courses and mergers of institutions, with cuts of up to 6 per cent in first-year numbers in some subjects. The final allocation was conditioned by an instruction from the government to increase numbers. The planned increase of funded numbers was 2.5 per cent and funding in cash terms increased by 8.5 per cent, though this still represented a slight real terms decline in the overall unit of resource. The Secretary of State noted that polytechnics had cut costs by an average of 19 per cent since 1979, rather faster than other colleges (Baker, 1986). NAB still attempted to encourage growth in science, engineering and other areas seen as 'vocational' though its ambitions had been restricted by actual recruitment in some of these areas. Most of the select initiatives funded on the NAB advice sought to encourage recruitment in these areas. There were cuts of up to 20 per cent in fine arts places.

The allocation of the AFE Pool for 1987–88 had barely got under way when a White Paper, *Higher Education: Meeting the Challenge* (DES, 1987a) announced significant changes for the polytechnics and major colleges in England. They were to leave local authority control and become independent statutory corporations. The NAB allocation for 1988–89 was expected to be the last under the old arrangements. It continued expansion of numbers (by 3 per cent over 1987–88) and broadly maintained the unit of resource (DES, 1987b).

The short history of NAB had a number of implications and lasting lessons for the polytechnics and significantly affected their futures. The establishment of NAB meant a uniform, centrally administered instrument was used to distribute student numbers and AFE Pool funds. It achieved the objective of moving from historic student numbers to targets.

For institutions, it had differing effects and consequences. Not least, it increased the desire of colleges to become polytechnics because of the differential funding opportunities. Pratt and Silverman (1988) analysed the responses to constraint after the 1984–85 planning exercise in four polytechnics and four other colleges. They found that differences in institutional impacts arose from the different circumstances in which institutions found themselves as a result of their previous histories. At one polytechnic, decisions taken 15 years ago, at the time of its formation, not to redeploy staff to other institutions, still affected the options open to managers in 1984–85.

Despite differences such as these, there were common features in the impact of the planning exercise on institutions. Institutional managers felt they could not afford to ignore government imperatives to move toward 'efficiency' as defined by indicators such as SSRs, and they responded sooner or later by maintaining (or often increasing) student numbers at lower unit costs – what Pratt and Silverman called the 'efficiency option'. In this regard, the responses to NAB funding were a continuation of a trend over a number of years. This became the pattern for the polytechnics in the 1980s, and contrasted with the response of the university sector to similar cuts in the same period. In this, the polytechnics conformed to the current government ideology, though not necessarily out of sycophancy; after all, the polytechnic tradition was to respond to increased demand, and the new 'rules of the game' meant that this was the only way to maintain their overall funding levels. The alternative was even greater cuts, particularly of staff.

In adopting the 'efficiency option' the polytechnics were responding to constraint conservatively, by cutting costs rather than radically reappraising their functions or services. Few sought to make radical reappraisals of their objectives. They did not, at least in 1984–85, produce the kind of strategic plan or mission statement or undergo the processes of 'portfolio analysis' recommended in the copious literature on this subject (e.g., Sizer, 1982). The polytechnics were not alone in this, as the Jarratt Committee showed when it commented on the universities' lack of strategic planning and coordination between academic planning and resource allocation (CVCP, 1985). Few polytechnics found the 1984–85 NAB planning exercise a satisfactory environment in which to develop such plans. There was a tendency to crisis management, because of the short time-scale, shifts in government policy and uncertainties about future financial circumstances. Institutions facing large cuts could do little else than get spending within acceptable levels. The annual change in the ways in which the AFE Pool had been allocated since it was capped meant that it tended to favour one kind of institution or activity over another on different occasions, though institutions could not be sure of exactly how until near the beginning of the financial year. There was a sense of aiming at a moving target.

The advent of NAB and its planning exercises meant that polytechnics felt the need to increase control over resources. Institutions which were already operating at high SSRs generally had such systems; others found they had to be created quickly. In most polytechnics, this meant more centralized control. Pratt and Silverman (1988) found that even when a polytechnic used the participative procedures of academic governance, members of the directorate became the key figures determining staffing levels and often seemed pleased to be so regarded. Most of their case study institutions used their existing structures of academic governance and executive responsibility of directorates rather than special committees or new structures to cope with the problems of constraint. In this they differed somewhat from the universities (Shattock and Rigby, 1983). This revealed, paradoxically, one of the benefits of local authority funding. Polytechnics had always had to consider each head of spending in some detail and had procedures for dealing with this. The polytechnics and colleges also began to consider more devolved responsibility to cost centres.

Institutions did, however, show a tendency to restructure faculties and/or departments when faced with constraint, justifying this on the grounds of increasing efficiency and improving academic quality, although such policies clearly served a number of different purposes. There seemed to be no clear pattern: one institution was strengthening faculties at the same time as another was eliminating them. Pratt and Silverman (1988) commented on the dangers of taking such policies too far; one polytechnic's history of almost continuous restructuring caused a lack of stability and lowered the morale of staff.

Despite its complexities, the NAB funding methodology was relatively transparent, certainly by comparison with the past and with the current practice in the university sector. The basis of the methodology, although arcane, was known. This was largely intentional, reflecting the traditions of the public sector, but in any case it would have been difficult for a body with representatives of so many stakeholders to act secretly.

This emerging practice had important implications not just for the allocation of funding to institutions but also within them. The methods and formulae used to calculate the lump sum allocation to institutions increasingly became used as the basis for distributing the total within them, eroding the principle of the block grant on which the system was predicated and the autonomy of the institutions. Institutions knew, in particular, of the best practice SSRs employed in it. Because institutions felt obliged to respond to the 'efficiency' imperatives of the exercise by attempting to control expenditure and increasing their SSRs, they increasingly made use of the NAB/HMI best practice SSRs in the allocation and control of resources to courses. As Fielden (1982) predicted, the polytechnics and other institutions used quantitative NAB weightings to make difficult decisions about staffing and possible redundancy and resource allocation to courses. NAB formulae – to calculate what was in effect a block grant – were increasingly transported inside institutions.

This raised questions about institutional autonomy. Although the principle was maintained that the LEA and the institution determined the internal allocation of the total institutional budget, this increasingly became notional, as the formula used for calculating the NAB allocation became seen more and more as determining its distribution internally.

The practice had educational as well as financial implications. Standard indicators, based as they were on notional calculations, did not take account of actual differences between and within institutions. Institutions or courses which did not conform to the 'notional' pattern for whatever reason could be penalized. Institutions cited innovative courses on a multidisciplinary or modular basis as suffering from the categorization of courses into NAB's strict programme areas. Courses which by their nature required small-group teaching, such as practical training with expensive equipment, in-service education requiring intensive visiting, clinical work or fieldwork, were all threatened by higher SSRs. The weighting system adopted by the DES for part-time work was seen to endanger its viability in some institutions. The potential for innovation was further threatened by higher SSRs, since work by staff to develop new teaching methods or adapt course structures to deal with bigger classes was jeopardized by the time limitations imposed by higher SSRs. While actual contact time might not have gone up with bigger classes, the 'iceberg effect' of more marking and course preparation was reported by teaching staff in more than one institution.

At a national level, the establishment of NAB meant that the government had, at last, the planning mechanism for the whole of public sector higher education it had, hesitantly at times, been wishing for in past decades. Although NAB was in part established because of the practical need for a mechanism to allocate the capped AFE Pool, it was undoubtedly a planning, and not just a funding body. It was a device through which the government could, and did, direct the development of the polytechnics and the other colleges in a way that had not hitherto been possible.

NAB used its powers of course approval and funding to close courses and to increase and preferentially fund places in priority subject areas. It offered some elements of incentive funding, rewarding institutions for 'efficiency' and offering encouragement for recruitment in particular subjects. It supported special initiatives and even some research – again for the first time in the polytechnics' history. In 1987–88, for example, some £15m was allocated for select initiatives, and the bulk of the funds went to the polytechnics. In 1988–89, some £25m of the total pool allocation of £781m was for 'selective initiatives of high priority in institutions of strength'. Eight polytechnics received funds for the Engineering and Technology Programme (ETP), nearly £10m went to 'applied research of relevance to industry,' and other funds to conversion courses for non-scientists to take science and engineering, to continuing education and professional updating and similar initiatives seen as relevant to economic needs.

NAB also began to employ the criterion of 'quality' in its judgements about the allocation of funds and closure of courses. The use of HMI 'best practice' SSRs involved the Inspectorate's judgements about education in funding decisions and foreshadowed PCFC's greater use of HMI in funding decisions based on quality. NAB also sought information on the quality of courses from CNAA in 1984, precipitating an acrimonious debate about the Council's responsibilities. It was taken to court in 1986 over proposals to close architecture courses at Huddersfield and North East London Polytechnic, though it won the case. NAB was pressed here by the government, with the Secretary of State insisting on action about courses which, though 'of adequate quality in themselves, seem to have less than others to contribute to the meeting of longer term needs' (Gold, 1986). These issues were to arise again with the creation of PCFC.

The funding mechanisms NAB introduced revealed the enduring complexity of the problem of funding a large number of diverse institutions. Although NAB was criticized for this complexity and its arcane detail, it was probably inevitable. Experience throughout the world suggests that formula funding is complicated, especially in a diverse system (O'Hara, 1985b).

The creation and operation of NAB inevitably affected the role of the local authorities, and hastened the removal of the polytechnics from their control. NAB effectively took decisions about the funding of the polytechnics and other major institutions out of the hands of the LEAs. The bulk of their funds were now allocated by the Secretary of State on the advice of NAB. The funds of the LEA for their institutions over and above NAB allocations, particularly in the polytechnics, were increasingly referred to as 'topping-up' although technically the whole budget was the LEA's responsibility. LEAs increasingly felt that they had little control of their polytechnics; the polytechnics felt they were earning their own income. The Committee of Polytechnic Directors had shown in 1980 that LEAs with polytechnics directly contributed little more than 3 per cent of the polytechnics' income, though the figures ranged from 0.6 per cent at Kingston to 8.6 per cent at North Staffordshire. The capping of the AFE Pool had already heightened local controversy; at Liverpool an increase in the rates was necessary to meet the 'shortfall' in 1980 (Ferguson and Robertson, 1982).

Throughout its existence, NAB faced one major dilemma – between access for students and the maintenance of the unit of resource. It took differing views on this from time to time, but over the period access won. Although it was often chided by the government for not doing enough, NAB drove down the unit of resource in the polytechnics and the other colleges. The reduction was sufficiently severe for CNAA to warn that it could lead to withdrawal of approval of courses (Jobbins and O'Leary, 1986). NAB was, however, helped in this drive for 'efficiency' by the institutions themselves, by recruitment of students above NAB targets and receiving only their enrolment fees, even when they themselves were complaining of its decline. In 1987, there were 6,000 'fee only' students in the sector (out of a total of nearly 300,000). The institutions themselves faced the same dilemma, of course, and strived to maintain access, to an extent that even worried NAB on occasion. In 1986, it threatened to penalize Birmingham Polytechnic for over-recruiting by reducing its intake numbers (Williams, 1986). Even the Chair of CDP voted for the recommendation in defence of the unit of resource, although towards the end of NAB's existence, the polytechnic directors advocated maintaining access even at the cost of cuts in unit of resource. In 1987 NAB itself began considering 'marginal' funding, by inviting institutions to bid for lower funded student places above their targets. All of these issues faced the new funding council when it took over from NAB in 1989.

## The Polytechnics and Colleges Funding Council

The 1987 White Paper proposing the creation of the new funding council was the culmination of a debate about higher education going back for a decade, and the changes to the funding arrangements of the polytechnics and other colleges were part of wider reforms. They were particularly bound up with the governance of institutions. The government's intention to remove the polytechnics and some other major colleges from the control of local authorities and establish them as independent corporate bodies (see Chapter 8) of itself necessitated changes to funding mechanisms; the funds for the polytechnics and colleges would now come from central government. The institutions were to be funded through a new Polytechnics and Colleges Funding Council (PCFC). Model B (DES, 1981b) had at last arrived. Parallel to this, the old University Grants Committee (UGC) was abolished and replaced by a smaller Universities Funding Council (UFC). The White Paper saw these changes as reflecting the polytechnics' national role and as giving 'scope for better management' and permitting 'greater responsiveness to economic needs'. These intentions were reflected in the composition and terms of reference of the PCFC. It was to be an independent non-departmental body appointed by the Secretary of State. It would be small, with strong representation of industry and commerce. It was to 'contract' with institutions for the provision they would make, an arrangement intended to encourage them to be enterprising, and to 'sharpen accountability'. In Wales, the Welsh Advisory Board was to continue, at least for the time being, with the polytechnic and colleges under local authority control, though WAB was given notice that it was expected to offer advice 'based on national, as opposed to local, considerations' (DES, 1987a).

When PCFC was established by the 1988 Education Reform Act, it consisted of just 15 members. The idea of contracts was dropped; it would make grants to institutions and authorities, but they would be subject to conditions (which were subsequently mainly in terms of provision of places). It was responsible for 83 corporate institutions including the 29 English polytechnics and for higher education provision in 57 local authorities. It, like its counterpart for the university sector, introduced new mechanisms for allocating funds to institutions. This involved institutions in 'bidding' for the numbers of student places they would offer and the price at which these places would be funded. PCFC, too, took an explicitly 'managerialist' approach to institutions; one of its requirements was for its institutions to produce strategic plans for their development over the three years from Vesting Day (1 April 1989) when they became incorporated.

PCFC was established in November 1988, in advance of the incorporation of the polytechnics and major colleges. At one stage the government hoped that NAB would be abolished and the AFE Pool allocations for 1989–90 be made directly from the DES, but in the event NAB was asked to advise on this, and PCFC's first allocation was broadly based on the advice of NAB using the existing methodology, though the advice on select initiatives was modified. Transitional funds were allocated by PCFC for the costs incurred in incorporation.

When it took over funding of public sector higher education, PCFC identified a series of objectives for its own funding methodology, the overall one of which was 'to secure a system which plays its part in meeting the social and economic needs of the nation' (PCFC, 1989a). A consultation document set out these objectives and identified four different models for funding. The objectives included 'national needs,' including a shift to science and technology and increasing links with industry and commerce; widening access, including increasing participation by non-traditional students, enhancing continuing education, and overcoming the projected dip in traditional 18-year-old students; accountability by making funds conditional on delivery; efficiency and independence for institutions and value for money; scholarship: advancement of knowledge and applied research; and improvement in quality. What might be termed 'process criteria' for operation of the funding methodology itself were also established. It should not be excessively bureaucratic, institutions should have the freedom to seize opportunities (flexibility), and the process should be open and straightforward.

For the polytechnics and colleges in England, the system chosen by PCFC began in July 1989, when they received formal notification from the PCFC of the way recurrent funding for 1990–91 was to be allocated. PCFC announced that about 5 per cent of funds would be held back for competitive bidding by institutions.

The bidding mechanism chosen by PCFC embodied concepts which had been alien to traditional British higher education. The mechanism, for example, incorporated an explicit element of competition between institutions which the Council saw as helping *inter alia* to 'obtain better value for money from public funds by seeking to fund the most cost effective provision available,' and helping to 'maintain the pressure for improvements in the management and efficiency of institutions' (PCFC, 1989a). Its bidding system implied that – and was meant to enhance the extent to which – institutions were operating in a market. It was to continue the process began by NAB of driving down the unit of resource. PCFC introduced, too, a link between quality and funding. Institutions' allocations would be higher if provision in the programme area was judged to be of high quality by HMI. Institutions were invited to identify which provision they thought fell into this category. For the universities, the bidding system started a year later, and differed in that it was to apply to all the universities' recurrent funds. Universities were invited by the UFC to attach prices per student place they were prepared to teach during the period 1991–95. They were given guide prices by the UFC, based on average spending levels in all universities for each subject (UFC, 1990). In the event, they formed a cartel and bid at the guide prices.

A Circular of July 1989 set out the new PCFC rules. For 1990–91, institutions were to be allocated 'core funding' based on 95 per cent of their student number allocations for 1989–90. This would take account of inflation (at least in so far as it is measured by the Treasury deflator). This part of institutions' funds was thus still based on the NAB methodology, which *inter alia* meant that it contained components which, because of damping, reflected the circumstances of institutions several years before. (In addition, because most institutions had recruited numbers in excess of their core figures during September 1989, the core generally represented less than 95 per cent of their actual numbers.) For the rest of their funds, institutions had to make their bids by October 1989 for additional numbers and prices. Institutions' bids had to relate to their strategic plans already lodged with the Council. Bids were to be made in each of the PCFC's nine programme areas. Full-time, sandwich and part-time students were to be identified and priced separately. The bids were to be considered against a set of criteria, including: growth – as many student places would be funded as possible, subject to maintenance of quality: at least 3 per cent growth was expected; student demand – particularly as reflected in the latest available recruitment figures; higher prices would be available for work of high quality (HMI advice would be used in judging this); the most cost-effective bids would be selected.

The decisions would be made by PCFC after its Chief Executive had received advice from a set of Programme Advisory Groups (one for each programme area). PCFC followed NAB in identifying science and technology as priority areas. Student numbers in these programmes were to be 'protected' and funding allocations in this area would not be less than current levels.

On 5 October 1989, the PCFC published its *Guidance to Programme Advisory Groups* (PCFC, 1989b), describing the criteria which the Groups would use in assessing institutions' bids. The Guidance refined the earlier criteria, but emphasized student demand, quality and price: generally the groups would give preference to bids offering the lowest prices per student, to bids implying a broadening of access, and to those maintaining specialist provision. There was to be no decline in the level of provision in local authority institutions, and the Council would negotiate with institutions rather than reject a bid of considerable significance to any institution.

There was a further, post-bid modification to the methodology. When bids were considered by PCFC, a system of 'moderation' was devised, so that a range of bid prices was accepted, since otherwise a few institutions with low bids would have gained all the funds. Institutions which bid high received fewer additional student numbers, and some which bid beyond an upper price received none at all. Those whose work was recognized as of high quality by HMI had their bid prices reduced by the 10 per cent price premium, so gaining more places (at full price) in the bid process.

The task that the PCFC bidding system presented for the institutions was formidable. Having learned how to cope with the variety of NAB funding mechanisms, they now had to create *ab initio* a system for responding to an entirely different one. They were faced with a different set of programme areas from those of NAB. They had to devise a system for preparing up to 27 different bids (for each programme and mode), and in the first year, produce what they hoped were successful bids in a period of less than three months, nearly all of it in the summer vacation. They had to decide whether to bid for quality. There was no experience of such a process in the sector, and little of direct relevance from elsewhere. The process differed from conventional tendering processes in that there was no specification of the task to be performed. The bid included its own specification. Nor, on the other hand, was bidding a simple market process, for the main market element lay elsewhere in the fees paid by students. Institutions also had a further set of decisions to make about recruitment of fee-only students above NAB and PCFC targets. Fees had already been raised – from £607 to £1,675 – to enhance this market.

Pratt and Hillier (1991) recorded and analysed the responses to the 1990–91 bidding process in a sample of polytechnics and colleges. They found that the institutions to some extent saw the process as a 'game play' in which they sought to maximize their chances of success. They were aware that the outcome of the bid was dependent on a large number of factors, and many unknowns: they did not, for example, know either the numbers or prices competitor institutions may bid, and expressed some uncertainty about what would be the key criteria in the evaluation of bids. Turner and Pratt (1990) showed that no simple bidding system could, in fact, meet all the criteria set by PCFC. In these circumstances different approaches to bidding were generated. Some institutions adopted a 'risk averse' strategy, in which their bids were deliberately set low to ensure that they were successful. Some identified a 'global sum' which they believe represented the 5 per cent share of the quantum that they would otherwise have received, and tailored their bid to match this, or exceed it by a margin to allow for the hazards of the process. Others took the view that they should bid at prices that reflected 'realistic' costs, even if this put them at risk of being unsuccessful. Institutional managers were aware of the danger of loss of credibility if they made bids for high numbers that they could not then deliver. Equally, they were concerned in some cases that a bid for high numbers would stretch the institution to its limits, but felt they had to take the risk because of the uncertainty of the outcome.

The costing of bids generally appeared to be a very judgemental process. Pratt and Hillier (1991) reported varying standards of internal cost information, but generally institutions priced their bids according to estimates of likely success or failure. Some identified floor prices below which they could not go; another guessed the likely maximum price for each programme area and ensured that its bids were below this. There was considerable variation in costing of part-time courses, even between programme areas in the same institution. Tactical considerations may have been involved in some of these. The aggregation of costs for diverse activities within a programme area presented problems in some institutions. There were problems of the relationship between organizational structures and the delineation of programme areas by PCFC. Some faculties and schools were more or less coterminous with programme areas, others were not, and the construction of bids by programme areas was complicated by this.

The issue of quality raised concern both in the polytechnics and the sector as a whole. There were widely differing views on bidding for higher prices for work of higher quality. In some cases, the issue of quality appeared to be seen as a tactical matter. Some institutions felt that the 'quality card' had to be played sparingly, on grounds of credibility, or in recognition that few quality bids would be successful. One institution felt that all its work was of high quality and therefore did not bid for higher prices in particular areas. There was dispute throughout the sector about the validity of HMI judgements because of the differing lengths of time since HMI visits.

Most of Pratt and Hillier's respondents complained about the uncertainty of the process. There was widespread concern about 'moving goalposts'. The timetable was criticized, and held to contribute to the need to centralize decision making, though there was a recognized dilemma here, between having up-to-date recruitment data and adequate time to prepare bids. Most respondents expressed concern that the scrutiny of quality was limited to high price bids. Some concern was expressed on the division of funds within programme areas by mode of study and the effect that this might have on the success of bids for part-time students and increased access.

The bidding process presented institutions with problems about consultation and participation. There were varying extents of consultation within institutions. Some sought bids from their faculties of schools, and aggregated these with greater or lesser central adjustment. At others, much of the process seemed to rely on a few key senior figures. The limitation on the number of people involved in devising the bid generated concern about collegiality within institutions and the increased concentration of decision making in the hands of a small executive.

There was considerable concern about confidentiality and its effects. Institutions were reluctant to reveal information about their bids even within the institution. At one of Pratt and Hillier's sample polytechnics, even the Governing Body was not given the full bid document with prices. Similar concern was expressed about the competitive atmosphere between institutions, and the damage that this was causing to the identity and coherence of the sector.

The first PCFC allocation based on its new funding methodology produced dramatic changes for the polytechnics. Funding varied between real terms increases of 8 per cent at Sheffield to a reduction of 2.6 per cent at Central London (PCFC, 1990a). Funded student numbers increased overall by about 6 per cent, with variations between programme areas and institutions. The greatest growth of full-time numbers was in business and management, and of part-time in health and social sciences, humanities and art, design and performing arts, despite PCFC's attempts to 'protect' science and technology.

The accepted number of bid students was just under half of the total bid, and it was clear from the median and upper and lower quartile accepted bid prices that there was a wide range of bids; the upper quartile figure in some programmes was nearly twice the lower quartile figure.

The 1990–91 PCFC allocation set the pattern for the remaining years of PCFC's existence, which turned out to be even shorter than NAB's. There were, as with NAB, changes. For 1991–92, the core for full-time and sandwich students was set at 90 per cent of the 1990–91 allocation, though it remained at 95 per cent for part-time students. Increased emphasis was given to quality, with price premiums of up to 20 per cent. The government had decided to alter student fees so that there were two 'bands' with fees for Band 2 (mainly laboratory-based courses) higher than Band 1. The main outcome of the 1991–92 allocation was an even more dramatic increase in funded numbers than in 1990–91. Overall numbers increased by nearly 17 per cent on the 1990–91 funded numbers (many of these being existing fee-only enrolments now becoming funded students). The proportion of accepted bids was higher than in 1990–91 and some of the unsuccessful institutions in the earlier year redeemed their positions. Central London, the polytechnic doing worst in 1990–91, had an above average gain in total public funds (including fees) of 12 per cent in cash terms (about 6 per cent in real terms). The allocation for 1991–92, as for 1990–91, increased funded numbers most in health and social sciences, humanities and arts. Although provision in the protected areas was maintained, there was little growth – engineering funded places increased by barely 5 per cent over the two years. The 1991–92 PCFC allocation was the last for the polytechnics before they acquired university titles, though the 1992–93 allocation was made by PCFC, using a similar mechanism, with yet further changes of detail.

The PCFC bidding process resulted in a substantial increase in student numbers in polytechnics – funded numbers increased by 24 per cent from

1989–90 to 1991–92 – but little increase in resources in real terms. The unit of resource across the PCFC sector declined; in 1990–91 it was nearly 2 per cent lower per funded place than the previous year in real terms. In 1991–92 the change in fees complicates matters; total spending on funded places increased by about 2 per cent per place in real terms, but if compared to actual enrolments in 1990–91 was about 5 per cent lower. There were substantial variations in the decline of unit of resource. These reflect in part differential growth of numbers. Over the two years, City of London increased funded numbers by only 10 per cent; on the other hand, Lancashire and Leeds Polytechnics received over 40 per cent increases. Overall, CDP (1991a) estimated that whilst the planned efficiency gain was 1 per cent, polytechnics had delivered about 10 per cent.

This last figure indicates the extent to which the decline in unit of resource was fuelled by the institutions themselves, through recruitment of fee-only students. In 1990–91 for example, the 29 polytechnics recruited nearly 18,000 such students – nearly 40 per cent more than the previous year. The numbers illustrate the problems for institutions of the bidding system. Some of the recruitment was accidental, in that there were unanticipated increases in the numbers of students accepting places, but much of it reflects the polytechnics' need to secure at least the same income as in the previous year to avoid budget cuts. Many institutions pursued these 'cash recovery' policies, bidding either at low prices to secure funds through high student numbers or at higher prices for fewer students, and if still short of funds, recruiting fee-only students. The institutions thus found themselves party to the decline of the unit of resource of which they complained.

Despite this, the newly incorporated polytechnics managed to survive financially, and some indeed to make surpluses, albeit modest. Of 17 polytechnics' accounts analysed in 1990, four made surpluses of more than £2m in their first year as corporations, though three carried forward deficits (Brookman, 1990). But the situation remained precarious, with PCFC warning that the 1989–90 surplus of 2 per cent of total income would decline to 0.4 per cent by 1993, leaving institutions vulnerable to unexpected adverse factors (MacGregor, 1990c). The new financial regime brought other benefits, with the Polytechnic of North London for example able to buy the £8m freehold of a building by borrowing against existing assets, a practice not possible under LEA control.

In its brief history, PCFC could claim to have introduced new approaches to institutional planning and funding. It claimed (PCFC, 1990a) to have achieved many of the objectives it set for its funding methodology. There was increased participation; modest increases in provision for engineering, science and vocational courses; promotion of high quality provision; specific increases in enrolment, including non-traditional students; increased efficiency; and the incorporation of quality assessment into the methodology. There was clearly increased competitiveness between institutions. The development of strategic plans was also widely recognized by polytechnics and other colleges as a valuable exercise (Pratt and Hillier, 1991), though PCFC did not seem to use them to the expected extent in the bidding process. PCFC had had a relatively short period to prepare for any of this, and although it could have chosen to proceed more slowly, it would have been conscious of the need to be seen to be acting decisively. It also acted quickly in response to the experience of the first year of the bidding process and introduced a number of modifications in subsequent years.

Whilst PCFC's claims were undoubtedly accurate, institutions disputed the extent to which the funding methodology contributed. They were pursuing these aims before and despite, rather than because of, the PCFC funding system. PCFC conceded some of this (PCFC, 1990a), noting that the larger part of increases in student numbers in 1990–91 was attributable to over-recruiting by institutions. It can also be noted that the old NAB system had achieved similar increases in numbers and SSRs. Institutions made similar points about recruitment of non-traditional and part-time students. The bidding system had a number of drawbacks in this regard. Since courses designed for non-traditional students were likely to be expensive, they were unlikely to win bid funds. Furthermore, since bids were meant to be for marginal students, rather than for new courses, there were problems in funding new course developments. The percentage of part-time places accepted of total places bid was lower than for other modes. Whilst PCFC treated part-time students as numbers rather than FTEs, institutions claimed that the bidding system did nothing to help remedy the historic underfunding of part-time courses.

One respect in which PCFC could claim to have increased efficiency in institutions was in the impact of its bidding process on management information systems. The pressure to set competitive prices obliged managers to determine the actual cost of institutions' operations (Wolf and Wilson, 1990), though it increased the extent to which decisions were based on cost criteria.

PCFC achieved its objective of making quality assessments part of the funding methodology. There appeared to be agreement in principle in institutions that quality was a valid consideration in funding, but there was disagreement over whether the funding mechanism 'promoted high quality educational provision'. The system of assessing quality remained an area of dispute, where institutions felt that the outcome depended on luck and the accidents of history of HMI visits. It was an issue where game-playing considerations, more than genuine considerations about the quality of courses, often affected the way institutions bid. The widely used phrase, 'playing the quality card' aptly reflected the way in which many managers saw the process.

For others of PCFC's original objectives for its funding mechanism (including the advance of scholarship, pursuit of knowledge and undertaking applied research), the bidding system came under substantial criticism from institutions, and was widely seen as damaging. There was some justification, too, for the criticism that PCFC moved the goalposts. The problem for PCFC was that it was virtually impossible to make some of the decisions before the bids were received. The range of numbers and prices bid were themselves factors in the process. The uncertainty was inevitable in this kind of process, a result of the decision to have bidding in this form.

What constituted 'success' in the bidding process from the point of view of institutions was also unclear. Some institutions saw success in gaining more funds invariably at the cost of a lower unit of resource. Moreover, the success of a bidding strategy could not be judged on the outcome of the one year alone: success in one year could be jeopardized by future funding policy. Because of the difficulty of matching bids with recruitment, institutions sometimes found themselves bidding in one year to remedy the difficulties caused by the outcome of the previous year's bid. Bids became attempts to secure funding for fee-only students already enrolled, and thus a reactive rather than proactive process. One of the polytechnics in Pratt and Hillier's (1991) sample was trying to secure PCFC funding for over 400 fee-only students in 1991–92. Turner (1992) showed that for many institutions, the PCFC methodology meant that stability of funding was unattainable. An analysis by Pratt and Turner (1995) showed that none of the polytechnics could be said to have 'learned' from the bidding process to systematically improve their performance year on year; they argued that such learning was not possible under the PCFC system.

PCFC differed from NAB in a number of ways, but perhaps the most significant was in its claims to be a funding and not a planning body. Its bidding process was meant to leave the distribution of additional provision to a market mechanism, in which student demand, quality and price were the key elements. But this was an unsustainable claim; indeed Scott (1990) referred to it as 'dishonest'. The many interventions, moderation for example, by PCFC had planning implications as did its measures to 'protect' student numbers in some programmes and, as Pratt and Hillier (1991) pointed out, it had a planning function through allocation of capital funds, which at £136m in 1991–92 were more than double the size of the bid funds. They argued for an 'investment' model for PCFC funding based on institutions' strategic plans. PCFC also maintained the NAB tradition of select initiatives to encourage particular developments and explicitly introduced some limited funding for research. A Committee of Inquiry set up by PCFC recommended in 1990 that increased funding should be provided for research, and £35m was allocated selectively in 1991–92. PCFC thus again took a planning role, though it maintained its 'funding body' position in asserting that the level of PCFC funding for research 'should otherwise be left to the discretion of individual institutions'.

One of the aims of the 1987 White Paper had been to enhance the institutions' ability to benefit from entrepreneurial activities and develop sources of funding other than the public purse. The polytechnics had been 'entrepreneurial' since their inception in the sense that they saw themselves as responsive institutions, but a much greater proportion of their income than in the universities came from public funds. Insofar as they were a

*Table 7.5* Sources of polytechnic income at constant 1980 prices (£m)

| | *1982/83* | *1983/84* | *1984/85* | *1985/86* | *1986/87* | *1987/88* |
|---|---|---|---|---|---|---|
| Total income | 615 | 557 | 591 | 656 | 735 | 900 |
| AFE Pool | 434 | 445 | 450 | 486 | 532 | 694 |
| Tuition fees | 92 | 97 | 87 | 95 | 117 | 126 |
| Short courses, etc. | 6 | 2 | 1 | 2 | 2 | 3 |
| LEA top-up | 65 | 45 | 39 | 42 | 43 | 40 |
| Research Councils | 3 | 4 | 0 | 3 | 4 | 5 |
| Other research | 6 | 9 | 14 | 19 | 26 | 33 |
| Other services, etc. | 9 | 0 | 0 | 11 | 12 | 18 |

*Source:* Williams 1992.

measure of enterprise, student fees were the main enterpreneurial income, but income from fees and other sources was modest. Tuition fees in 1971–72 amounted to £6m out of nearly £80m spending, and other income was just under £4m. Table 7.5 shows a similar picture for later years. Williams and Loder (1990) found that business contributed 2.4 per cent of income of the polytechnics but 6.3 per cent in universities; externally funded research accounted for about 2 per cent of income in the polytechnics but 20 per cent in the universities. Incorporation was expected to encourage polytechnics to be more active in seeking entrepreneurial income as surpluses remained with the polytechnic without the need to negotiate with the LEA. A number of polytechnics had set up trading companies in the 1980s to facilitate consultancy, contract research, short courses and other activities. Williams and Loder (1990) reported one with a turnover of more than £6m. Several polytechnics established science parks, or as at South Bank, a 'Technopark'. Polytechnics increasingly looked to overseas students as a source of income, since from 1980, these paid full cost fees. Polytechnics were again less active in this market than universities, with fewer than half of Williams and Loder's sample having a central policy on overseas student recruitment. But, as we saw in Chapter 3, they increased enrolments to nearly 25,000 by 1991–92, though this was less than half the numbers in the universities and represented only 6 per cent of full-time and sandwich students compared with 16 per cent in the universities (Table 3.28).

Entrepreneurialism was not restricted to private funds. The growing selectivity in all forms of funding, and the greater need to compete, meant that polytechnics increasingly adopted an entrepreneurial mode. Public funds promoting particular policy aims were available for polytechnics on a competitive basis, as with the Enterprise in Higher Education initiative. Fowler (1988a) listed a number of publicly funded income-generating activities, including the DES PICKUP scheme to promote short retraining courses, the Teaching Company scheme of the Department of Industry, and the Department of Employment's Manpower Service Commission's programmes in higher education.

## Funding for a unified system

The passing of the 1992 Further and Higher Education Act meant the end of the PCFC. But although the polytechnics were expected to acquire university titles and the new funding councils were to be established during 1992, the new system was not to come into effect until 1993. There were heated discussions about the funding methodology for 1992–93. PCFC was no lame duck in its last year. It recognized that some institutions were reaching their physical capacity and proposed that they be exempt from the bidding process (PCFC, 1991b). It was also anxious to stop institutions from converting their fee-only students into fully funded students (through the bidding process) and proposed that its contract with institutions should be based on 95 per cent of fee-only as well as funded students. Such a proposal had been made for 1991–92 but deferred; one polytechnic director saw its 'sole purpose' being to 'concentrate the exclusive power to determine student numbers for an institution in PCFC and to discourage fees-only enrolment in the future' (Knight, 1990). The polytechnics were opposed (CDP, 1991b); they were anxious, amongst others, to maintain stability of funding and to consider methodology for the longer term in a unified system.

The 1992–93 allocation further reduced the unit of resource, with 13 per cent more funds allocated for a 16 per cent increase in student places. The polytechnics did slightly worse than other colleges, receiving average cash increases of 12 per cent, ranging from 24 per cent at Humberside to 5.5 per cent at Portsmouth. It prompted CDP to comment that 'price bidding is no way forward' (*THES*, 1992) and that the new funding councils would have to address the problem.

The polytechnics' experience had a number of lessons for the unified system, and they were anxious to ensure that the funding mechanisms of the funding councils were appropriate for them. Unifying the funding of the universities and the polytechnics was not an easy task. The two sets of institutions had been funded on different bases, even though the systems had converged in recent years. The UFC accepted PCFC proposals to examine 'increased commonality' between their funding systems as early as March 1991 (Brookman and MacGregor, 1991). But there were vexed questions, particularly over the disparity of funding levels between the sectors because of the universities' funding for research, and there was dispute, too, over levels of funding for teaching. There were many technical differences – in the funding of pensions, debt charges and similar matters – and even in the classification of subject areas. All of these issues had to be resolved in a unified system.

Because of these differences, funding comparisons between the sectors had always been controversial. A major attempt at such comparison had been made in 1985 by the Department of Education and Science (DES, 1985c). This developed a series of adjustments to take account of most of the variations in funding mechanisms between sectors. The data showed that the funding for a 'full time arts equivalent student' in the late 1980s was about £500 (20 per cent) higher in the universities than in the local authority sector (including the polytechnics) even after allowing for research. In 1990, the Chief Executive of PCFC compared PCFC and UFC funding levels for teaching, using PCFC allocations for 1989 and UFC's 'guide prices' (based on average teaching costs per FTE student), suggesting that the differences between the sectors were minimal. CDP undertook a number of studies of the comparative costs of the two sectors. A commissioned paper (Pratt, 1991) developed the DES (1985c) methodology and applied its adjustments (plus others) to calculate what additional funding full-time polytechnic students would have gained if funded at UFC guide prices. This suggested a maximum difference of over £1,200 per place and over £1,000 per enrolled student in 1990–91.

With these disparities, their relative success in recent years, and the unhappy experience of a bidding process in mind, the polytechnics pressed for a funding mechanism for the unified system based on the idea of 'efficient expansion,' rejecting an alternative based on strategic plans (Pratt and Locke, 1994). CDP's formal aims included stability of funding and responsiveness to the differing needs of institutions (CDP, 1991c). The CDP Annual Conference in 1991 made clear a less public objective – that any funding methodology should facilitate redistribution of funds between the sectors (referred to as 'the "Robin Hood" strategy') (CDP, 1991d). The efficient expansion model incorporated differential efficiency gains (expected to benefit the cheaper polytechnics), though CDP was anxious about institutions reaching their physical capacity; the universities were more likely to be able to benefit through expansion. In the event, the HEFCE opted for a core plus margin approach. The core was to be last year's student numbers, though funded to give an efficiency gain, with funds for growth allocated for places differentially funded by subject and for high cost institutions. For the ex-polytechnics, it was yet another set of rules, and it was not clear that they would benefit any more than the traditional universities.

Funding for research was another major issue. About 30 per cent of the UFC's funds were allocated for the support of research, compared with about 4 per cent in the polytechnics. In line with government policy, funds were increasingly allocated on the basis of quality, established through triennial research assessment exercises, and the 1992 exercise was the first where nearly all such funds were to be allocated on this basis. The polytechnics, having long complained of the disparity in funding for research, rather naively anticipated a considerable increase in resources when they became universities. But no additional funds were allocated to the funding councils for this, although the polytechnics were able to take part in the 1992 assessment exercise, and a small portion of funds (£12.5m out of £618m) was allocated for the development of research to assist the new universities. One polytechnic (Birmingham) took a principled stand and refused to take part. Given the shortness of time for preparation and their lack of experience the rest did creditably well, but gained just under 6 per cent of the total research funds. Again, the financial benefits of university status were doubtful.

## Conclusions

The history of polytechnic funding offers one overriding lesson: the government increasingly realized the power it could wield through control of resources. Where critics such as Pratt and Burgess (1974) had lamented the government's failure to use finance as an instrument of policy, by 1992 it was clear that government had learnt the lesson. Its funding agencies exercised greater, more detailed and more directed control over the polytechnics than ever before. When the polytechnic policy was established, little attention was paid to the funding mechanism, and what had been appropriate to technical colleges was assumed to be adequate. Consequently, the polytechnics were funded at levels inferior to the universities, even though the AFE Pool was open-ended. When it became clear that more control over the development of the sector was needed, the government moved slowly, and when the new government in 1979 acted, few of the ramifications were foreseen. NAB was established as an interim agency. It became clear that through a body like NAB, and subsequently PCFC, government could direct the polytechnics and other institutions towards particular kinds of provision and to dramatically increase 'efficiency'. Agencies such as these do, of course, have a life of their own, and acted according to their own views, too, causing disagreement with the government on occasion. But they were constrained by their situation and by the decision of the polytechnics to pursue the 'efficiency option' – a view stemming at least in part from a belief that it would advantage them politically. This was borne out by events: the polytechnics were praised by ministers for their responsiveness to demand and increased SSRs, and their attainment of corporate status and university titles can be seen, in part, as a reward for this.

The use, itself, of funding agencies such as PCFC and later HEFCE was a further shift in policy, reflecting a wider change in the 1980s. Scott (1995) has described how the relationship of higher education and the state has shifted to a contractual from a fiduciary one, with the state more concerned to audit outputs than provide inputs. Part of this change involved placing institutions like polytechnics much more in a market environment. Under PCFC (and now under HEFCE) they had to compete with each other for government funds, for students and their fees, and increasingly for other sources of income. This meant a shift from arm's length funding (through the AFE Pool) to a direct contract with the funding agency; a similar change happened to the universities. Whilst government might claim that this meant it had freed polytechnics from central control, the fact that it was the sole 'purchaser' through its funding councils meant that it could exercise its policy priorities and the polytechnics remained subject to the funding councils' imperatives. To that extent the market was illusory.

The concern that polytechnics should demonstrate the achievement of outcomes through such devices as performance indicators, increased the sense of detailed control. The universities had responded to similar pressures by publishing an annual document detailing 72 indicators for each institution. The 1987 White Paper looked to PCFC to take the lead in promoting performance indicators (PIs) in the polytechnics and colleges. It established a committee of inquiry on the topic in 1990. The movement for PIs had been developing for some time. The AFE had used measures such as student staff ratios (SSR), average class size (ACS), average lecturer hours (ALH) and average student taught hours (ASH) as indicators of efficiency since the 1970s. HMI reported a survey of 23 polytechnics and 20 other colleges in 1990, which showed that institutions were turning to more elaborate indicators, though the absence of comprehensive databases constrained their development. There was no systematic approach. HMI (1991g) and PCFC (1990b) advocated indicators related to institutional mission, but there was widespread concern about the appropriateness of the indicators to educational and other objectives (McElwee, 1992). Attempts by commentators in polytechnics to develop indicators of educational 'value added' revealed the complexity of the task (Gallagher, 1991; Hadley and Winn, 1992; Straw and Kaye, 1995).

In the increasingly competitive financial climate of the 1980s and 1990s, the polytechnics showed they could survive. They felt sufficiently 'street-wise' to advocate (despite warnings) a funding methodology for the unified sector which rewarded low cost, 'efficient' and expanding institutions, just like them. They were not, perhaps, as 'street-wise' as all that. The new funding council's funding mechanisms did advantage them to the extent that many received large increases in their allocations for teaching, but this was based on recruitment of additional students; subsequently they have been frustrated by the policy of consolidation of student numbers. Ambitions based on assumptions of expansion were severely thwarted.

The history of polytechnic funding also reveals the increasing complexity of funding mechanisms. This reflected the attempt to exercise greater direction and control over the sector and explains, too, the frequency and complexity of the changes in the methodologies. As Pratt and Silverman (1988) showed of NAB, and Turner and Pratt (1990) of PCFC (and the considerations apply also to HEFCE since), any funding mechanism has to conform to a variety of criteria, many of which are conflicting – as with access and maintenance of the unit of resource. There were elements in the various funding methodologies to attempt to accommodate all these. Since it is impossible to meet all these criteria (Turner and Pratt, 1990), the methodologies were amended annually to achieve a different balance between them, not to mention accommodating additional policy criteria. So far as the polytechnics were concerned, the systems were hideously complicated and increasingly unpredictable. The polytechnics experienced the problem of policy making under adversity that Dror (1986) characterizes as 'fuzzy gambling' and all the signs are that they will continue to do so as 'new' universities.

# 8

# Governance and Management

One of the key features of the polytechnic sector of higher education was the nature of governance of institutions. Unlike the universities, the polytechnics were local authority institutions. Their relationship with local education authorities proved to be one of the most difficult problems they faced. It was this that, perhaps more than any other issue, led to the abolition of the polytechnic sector.

The issue was identified by Crosland in the Woolwich speech. He mentioned it only briefly, referring in a contentious phrase to the desirability of a substantial part of the higher education system being 'under social control' and 'directly responsive to social needs' (Crosland, 1965). He did not say exactly what he meant by social control, but it seemed clear when he went on to say that it was 'further desirable' that local government 'should maintain a reasonable stake in higher education'. The arrangements were contrasted with the universities' 'autonomy'. Later, in the Lancaster speech, he admitted to having expressed the case for 'social control' badly (Crosland, 1967). He was anxious to reassure the universities that he did not think they were unresponsive to social needs, but he went on: 'Given the high degree of academic autonomy which they enjoy, there is a sense in which the other colleges can be said to be under more direct social control'. He made two wider points. First, it was a 'valuable feature of our democratic tradition that elected representatives and local authorities' maintained a stake in higher education; second, of the need for plurality: 'we want not a monopoly situation . . . but a variety of institutions under different control'.

In arguing this case for social control, Crosland was reflecting, however clumsily, the different traditions that had developed in the governance of higher education institutions in Britain. The traditions had developed during the previous century as ways of regulating the relationship between higher education and the state. The issue was well described by the Robbins Committee in 1963. The Committee saw as 'the most important and difficult of all the problems' they had to consider, what machinery of government was 'appropriate for a national system of higher education in this country?' (Robbins, 1963). They recognized that 'effectiveness in this sphere can only be achieved if a nice balance is kept between two necessities: the necessity of freedom for academic institutions and the necessity that they should serve the nation's needs'.

Different solutions to this problem have been adopted in Britain and in other countries. Robbins had argued that 'a system that aims at the maximum independence compatible with the necessary degree of public control is good in itself, as reflecting the ultimate values of a free society' (Robbins, 1963). The justification was not just a moral one: 'We do not regard such freedom as a privilege but rather as a necessary condition for the proper discharge of the higher education functions as we conceive them'.

Robbins classified the freedom of the academic community into individual freedom and institutional freedom. The first included the absence of discrimination on grounds of race, sex, religion or political beliefs, and the right to teach according to one's own conception of fact and truth rather than any predetermined orthodoxy. There is the further freedom to publish and to pursue personal studies or research.

The constituents of institutional freedom are several. There is freedom of appointment. The Robbins Committee said that 'any obligation to refer appointments of staff to outside bodies for confirmation is an unacceptable limitation on the freedom of autonomous institutions' (Robbins, 1963). Then there are curricula and standards. Robbins asserted that it was 'fundamental that an institution should be able to prescribe the requirements of its courses and the combinations permitted,' thus raising issues that would later be central in the polytechnics' pursuit of freedom to award their own degrees. A similar case was made for the maintenance of standards: 'We know of no argument that would justify the imposition of external control from the centre' and, 'Liberty to experiment with content and method is one of the surest guarantees of efficiency and discovery'.

Freedom of admission of students was more problematical. Robbins said: 'It would obviously be an infringement of freedom were academic institutions forced to accept or reject any particular student'. But there are difficulties 'when it is a question whether institutions . . . should have the ultimate right to determine their own size'. 'There can be no unconditional right to the money for any increase demanded'. So if an institution chose not to cooperate in some national policy, 'it must not complain if the various benefits . . . do not come its way'. There was a case for some form of overall control: 'Undoubtedly it is good that academic institutions should have the liberty to determine their own programmes and policy' but, 'it is unlikely that separate consideration by independent institutions of their own affairs in their own circumstances will always result in a pattern that is comprehensive and appropriate in relation to the needs of a society and the demands of the national economy' (Robbins, 1963).

In Britain, the resolution of these issues has historically been different, for different kinds of institutions. In the autonomous tradition, the universities were independent institutions, though for many years heavily dependent on state funding. Their staffs were (and are) employed by the university not the state. They have substantial responsibility for their affairs, much greater, for example, than their European counterparts in the Humboldtian tradition. They manage their own budgets. They create and control their own curricula. Because of their independence in Britain, the relationship between universities and the state was not clearly defined. It was only in 1989 that legislation appeared for the system of higher education.

For the UK universities, the way of resolving the central conflict of interest had been the use of a 'buffer' organization between the institutions and the state, historically the University Grants Committee (UGC), which operated for most of the period of the polytechnics' existence. The principles were simple: the creation of a 'device for interposing between the government and the institutions a committee of persons selected for their knowledge and standing and not for their political affiliation' (Robbins, 1963). The majority of the UGC consisted of people actively engaged in university teaching or research, so that the government was advised by a body of people with an intimate knowledge of university life and its conventions. Immunity from interference was further protected by the practice of making block grants to institutions for recurrent expenditure.

In the alternative, service tradition of the non-university higher education institutions, there were different institutional arrangements to resolve the conflict of interest. The institutions were state owned and funded. Often they emerged from or were created out of schools or colleges in the school system and were sometimes run on school-like lines. Their curricula were controlled by external or state agencies. The pattern is not uniform. In the UK, the polytechnics had significant organizational and academic responsibilities, and pioneered most of the educational innovations in higher education of the last quarter century. Often the opportunity has been taken to use the non-university institutions as experimental (OECD, 1991).

For these institutions in the UK, the protection of the institutions from the central government was twofold: first was the local authority. But as part of the state, local authorities were themselves controlled by central government through a multitude of regulations, prescription of standards, approval for funding, especially of capital, and even approval of many of the courses they offered. Equally, authorities did not have total control over what went on in their colleges. There was a second buffer in the form of governing bodies for most colleges, explicitly delineating the functions of the public interest and the academic community, and allocating responsibility between the local authority, the governors, the principal and the college academic board.

When the polytechnics were established in Britain, they were basically local authority institutions. With the exception of the five polytechnics in Inner London, they were maintained by local authorities. The authority was ultimately responsible for the polytechnic's expenditure and it owned buildings and employed the staff. In ILEA, the polytechnics were voluntary bodies, receiving their funds as a block grant from the authority. The polytechnics were clearly, in this sense, under 'social control'. The DES, according to Robinson (1968), was the body 'most strongly and unambiguously in favour of continuing the participation of local authorities in higher education'. Robinson asserted that the local authorities themselves were 'much less enthusiastic,' aware that higher education 'could rarely be regarded as a genuinely local venture' and many wished to be relieved of the financial responsibility. He recorded no paeans of praise for LEA administration of higher education. He emphasized the 'contempt' with which they were regarded in colleges and the danger to local democracy if their administration of higher education continued to be 'incompetent'. But he appeared to accept the argument he attributed to the DES: it did not wish to strengthen the university sector and the UGC, nor to take central responsibility itself: 'the local authorities are the only agents in sight'. The key to their successful involvement in the polytechnic policy was the nature and powers of the governing body.

## Polytechnic governance

When the policy to designate polytechnics was initiated, DES Administrative Memorandum 8/67 required the drawing up of instruments and articles of government by the relevant local authorities, to be approved by the Secretary of State, as a precondition of designation. The instrument of government determined the composition of the governing body of the polytechnic, the articles, the distribution of responsibilities and rules of conduct.

The Administrative Memorandum was the major constitutional instrument employed by the government to implement the polytechnic policy. Locke (1974) argued that this was in part a reflex action of professional administrators who could act in no other way. But it was also necessary, particularly in the case of polytechnics formed from institutions in more than one authority: the arrangements had to 'bring LEAs together and make sure they stayed together' (Locke, 1974).

The Administrative Memorandum followed the recommendations of a Committee established a few years earlier into the government of colleges of education – not surprisingly, since the Chairman of the Committee was Toby Weaver, the civil servant architect of the binary policy. The recommendations of the Report were subsequently embodied, with greater specificity, in the Education Act 1968 (No 2) and Circular 7/70 (Locke, 1972).

The Weaver Report, published in 1966, reflected the central issue defined by Robbins: 'to strike the correct balance between the freedom which institutions of higher education should enjoy and the social control which democratically elected representative bodies are required to exercise' (Weaver, 1966). The solution proposed by Weaver was to define the responsibilities of the authority (or providing body), the Governing Body and the academic board and principal. The Committee started from the conviction that 'the affairs of a college are primarily for academic people to deal with' and that every college should have an academic board which, subject to the general approval of governors, would be responsible for its academic work.

Local authorities were in the last resort responsible for the college, its efficiency, financing, staffing and premises, and for its size and character. The Governing Body should be responsible for the general running of a college and its broad pattern of courses.

On finance, the Governing Body would be responsible for the approval or amendment of estimates of expenditure and the academic priorities they implied as expressed by the academic board. However, because responsibility for expenditure ultimately lay with the LEA, all transactions should be in accordance with financial regulations made by the LEA, although it was hoped that these would not be overly restrictive. The difficulty of controlling expenditure through detailed annual estimates and the need to make efficient use of funds was also acknowledged, and a greater measure of virement was proposed in order to cope with changing needs and priorities; special funds were proposed whereby money could be carried forward from one year to another in respect of expenditure such as repairs, maintenance and equipment which varied from one year to another. The use of LEA services for repairs and maintenance, for example, should be required only where it could be shown to be financially advantageous.

Within the approved estimates the Governing Body should be free to determine academic staffing levels and grading, though it was acknowledged that the LEA should exert influence over the number of non-teaching staff posts in order to maintain broad comparability between the various institutions it maintained.

For the polytechnics, the requirements of Administrative Memorandum 8/67 were emphatic. The experience of ministers in dealing with the authorities after the Weaver Report had not been encouraging. With the polytechnics they were determined to be insistent on government. The issues had, in any case, been building up for years. The CATs had been taken away from the local authorities in part because of the constraints they had suffered; the Robbins Committee had recommended greater freedom for colleges doing advanced work and the removal of teacher training colleges from LEAs to universities. Then, as the polytechnic negotiations got under way, a further factor emerged. The student unrest of 1968 raised the issue of student representation in the governance of higher education. One of the major disruptions took place at Hornsey College of Art, due to be part of Middlesex Polytechnic.

Administrative Memorandum 8/67 required a system of government 'suitable for institutions offering courses of higher education in a wide range of disciplines and serving national as well as regional and local needs'. It had 'to be such as to attract . . . the highly qualified staff who will be essential' and to enable them 'to share fully in their government and management as academic communities'. Delegation of responsibilities to Governing Bodies 'with a large measure of autonomy' was essential. The polytechnics were to be given 'all possible freedom in managing themselves' with a minimum of detailed control by the LEAs. This indicates the seriousness with which ministers and officials took the issue of the polytechnics' governance.

The seriousness was reflected in the time it took to approve schemes of government for the polytechnics. Nearly 18 months elapsed before the first scheme at Newcastle was fully approved in September 1968, and the extended period of further designations shows how long some of the issues took to resolve. Nearly all the delays were because of the articles and instruments of government. There were several problem areas. The DES, under the Minister responsible for higher education, Shirley Williams, became increasingly insistent on liberal provision for student representation. The local authorities resisted allowing the chief administrative officer of the polytechnic rather than an LEA officer to be the clerk to the Governing Body. Some LEAs were also unwilling to allow polytechnic governors virement to spend within heads of expenditure, and freedom to spend up to certain limits without reference to the LEA.

Eventually all the 30 polytechnics were designated. No two sets of arrangements were exactly the same, though they followed similar lines (Locke, 1972). The articles of the designated polytechnics showed, as Locke (1974) put it, 'a confusing combination of uniformity and variety'. The local authority typically had the power to 'determine the general educational character' of the polytechnic and its place in the local educational system. The Governing Body was responsible for 'the general direction of the conduct and curriculum' of the polytechnic. Its composition varied, but it contained members representing the local authority (usually members of the council, usually less than one-third of the total), members with experience of industry, business, members of staff and students of the polytechnic, and coopted members. The director of the polytechnic was responsible for 'internal organisation, management and discipline'.

Each polytechnic had an academic board responsible for 'planning, coordination, development and oversight of academic work'. The board usually consisted of the senior staff of the polytechnic with elected representation of other staff and students, totalling nearly 80 members in the largest at North East London (Locke, 1972). So far as academic boards were concerned, the variations in articles were probably not of great operational significance. Some (like Bristol) were given explicit functions in the preparation of estimates affecting academic matters, whilst others were not.

The variations in instruments and articles were illustrated by Pratt and Silverman (1988) in a sample of four polytechnics in their study of financial constraint. They found that by the mid-1980s, Governing Bodies varied in size from 38 to 46 members. Representation of the maintaining LEA was a minority, though it ranged from seven members out of 46 to 12 out of 39. However, representatives of nearby LEAs were sometimes included so that at one polytechnic the local authority sector had a technical majority. All the Governing Bodies had representation of staff from both the academic board and by election, and of students. All included the director, one included the deputy director. About ten members of the Governing Bodies had 'appropriate' or 'relevant' experience of industry, commerce and the professions.

The articles differentiated functions between the LEAs and the Governing Bodies in a variety of ways. At one polytechnic, after the general statements cited above, the articles listed 15 different functions for both the LEA and the governors. Here the LEA had reserved its position to 'determine the broad range of courses to be provided' and 'to approve an academic development plan, after considering any recommendations of the Board of Governors' – a far cry from the Robbins' principles and a contrast with another polytechnic where the statement was more relaxed: 'in consultation with the Governors and where necessary with the Secretary of State for Education and Science, for determining the general educational character'.

The functions of the director mostly followed the conventions, though one polytechnic specified functions in more detail. At another a phrase was included about the director's responsibility for the 'deployment of resources'.

The formal roles of the academic board followed the model of Circular 7/70 of the 'planning, coordination, development and oversight' of academic work. One polytechnic referred to 'policy, balance and development'. The articles set out detailed responsibilities for examination and assessment of students; admission and exclusion (on academic grounds) of students; research and consultancy; and often consultations with the Governing Body on arrangements for the appoinment of staff; on preparation of estimates or resource planning and allocation of academic staff within the establishment. There were potentially significant variations over the academic board's involvement in resource issues. Only one of the four polytechnics had articles which gave no role to the academic board in resource matters, though one provided only for the academic board's involvement in resource proposals as part of an academic development plan and another for 'consideration of and recommendation on' estimates.

A crucial aspect of the relationship between polytechnics and their local education authority was the financial arrangements established by the articles of government. The general pattern was that the Governing Body submitted annual estimates of revenue expenditure to the LEA and, when these were approved, the Governing Body was authorized to spend in accordance with those estimates. It was constrained, however, in several respects. One constraint was that the polytechnic must use, or at least have regard to, the purchasing arrangements which the LEA had made with various suppliers. Typically, 'the [Governing Body] shall use the central purchasing arrangements . . . of the Local Education Authority'. One can readily see the issues at stake: on the LEAs' side questions of efficiency and economy; on the institutions' side their autonomy and their view that they knew best what they needed to buy. Often, however, the Governing Body had freedom to purchase below a specified amount. The articles for two polytechnics set a figure of £100, above which the Governing Body had to make use of central purchasing arrangements where 'more economical' (though both these articles were being revised).

A parallel constraint was that on carrying out repairs, alterations and maintenance. Governing Bodies often had to consult with the local authority, or could act themselves only below a specified figure (for example £2,500). A tighter hold was placed on one polytechnic: 'the [Governing Body] shall use . . . the professional and other services of the Local Education Authority'.

Further detailed controls were embodied in financial regulations and standing orders drawn up by the local authority. These covered such matters as bookkeeping and accountancy, procedures for placing orders and purchasing, and conditions for contracting and tendering.

One of the most important dimensions of polytechnics' freedom in articles of government was the power of the Governing Body to make their own decisions within each heading of the estimates, that is to exercise virement within the headings of the estimates. Thus the number of headings had important consequences for their freedom: fewer, more broadly drawn headings allowed more discretion to the governing body. Birch (1970) reported that for 13 of the first 14 polytechnics designated, only two allowed virement between academic and non-academic staff, and five adopted Weaver's 15 heads of expenditure 'in their entirety'. The formal headings in Pratt and Silverman's (1988) sample varied from seven to 16.

Another important area was the Governing Body's power over staff establishments. The basic statement was usually 'to determine within the approved estimates the total number and grade of academic staff'. But the nervousness of LEAs was indicated by one LEA's power 'to issue directions from time to time and particularly to the Board of Governors upon questions relating to the salaries, titles and conditions of service'. Another held back the power over the Principal's and Deputy Principal's salary scale.

Additional constraints were introduced in some cases. At one polytechnic, all questions about salaries, wages and conditions of service had to be 'in accordance with such directions as may be issued from time-to-time by the Local Education Authority to the Board of Governors'. At another, the Governors had to 'review the numbers and grades of non-academic staff annually prior to submitting recommendations and estimates to the Authority'.

The polytechnics were constrained, too, beyond what was formally entailed in their articles of government. As local authority institutions, the maintained polytechnics were generally believed to be bound by the policies of their LEAs in a range of areas. Pratt and Silverman (1988) found that their sample of polytechnics in the 1980s was particularly constrained by no-redundancy policies. Several reported that they were unable to introduce compulsory staff redundancy when they faced financial crises. It is not certain that this was legally accurate. One view was that the residual powers under the articles of government rested with the Governing Body not the LEA, but this was never formally tested at a polytechnic.

There were wide differences in the mechanisms for controlling numbers and costs of non-academic staff in the sample. The Weaver Report (1966) advocated that broad control of expenditure on staffing by LEAs should be exercised through the budget preparation and scrutiny process. All Pratt and Silverman's sample were formally free to determine non-academic staff establishments within approved estimates, but various procedures were employed by maintaining authorities to impose non-academic staffing establishments. These were designed to achieve a measure of comparability between various categories of LEA employees, but their effect was to remove discretion from the polytechnics in decisions on the creation and grading of posts.

In the Inner London polytechnics, too, there were substantial differences from the pattern (albeit varied) of the maintained institutions. As companies limited by guarantee (and registered charities), these polytechnics received their funds as 'grants-in-aid' from the ILEA. The governors, not the LEA, were the employers and were responsible for all finances, subject to negotiation with the LEA on their overall budget (NAB, 1987b). They could carry over balances from one year to the next and could become bankrupt. The ILEA applied its major control through the 'block grant' regulations. This contained the AFE Pool allocation and any other funds the ILEA wished to allocate (for example for non-advanced work in the polytechnics and for its policy priorities). The polytechnics had to agree to abide by the block grant regulations in accepting grant. These guaranteed each polytechnic its pool allocation and permitted virement between heads. The polytechnics were, however, bound to follow ILEA policies on salaries and conditions of employment for teaching and research staff and felt obliged to do so also for non-teaching staff. A NAB (1987b) report concluded that these arrangements provided a method for overcoming the carry-forward and virement problems faced by other institutions, but was uncertain how far the model could be applied for the sector as a whole; the LEA in the end had the power to determine the block grant regulations which were 'obviously . . . crucial' unless there was 'an impartial third party' to act as arbiter.

## The continuing debate

The attempt in the polytechnic policy to strike the balance between institutional freedom and control by elected bodies was not a satisfactory solution. Locke (1974) observed, even as the polytechnics were being established, that many of the recommendations contained in Administrative Memorandum 8/67 and Circular 7/70 were regarded with great suspicion by the LEAs. The protracted negotiations about the instruments and articles illustrate the point. Fowler, a former education minister, recorded (1988b) that by 1970, none of the five education ministers believed that the 'rickety structure of half solutions' for controlling and funding polytechnics and colleges could continue for long.

Nor did the designation of the polytechnics resolve the issue. The arrangements were criticized by both the polytechnics and the local authorities and were a concern to the government. The criticisms and concerns were not always identical or consistent. Some seemed trivial, others raised questions of legality. They ranged from the refusal by one authority to allow its polytechnic to have its own telephone number for years after designation, and the attempt by another to prevent short-listed candidates for the post of director from talking to any member of staff or student, to 'totally illegitimate interference' in appointments of staff (Robinson, 1995). The polytechnics felt they were not given the freedoms appropriate to their status; the authorities were concerned about their lack of control over these major institutions for which they were legally responsible. According to Robinson (1995) 'for almost 20 years . . . the articles of government poisoned the relationship between polytechnics and the local authorities'. At times, as at Teesside and Huddersfield Polytechnics, the disputes threatened the survival of the institutions and achieved national prominence.

## *The polytechnics' view*

The polytechnics' view of their governance arrangements was, from the start, equivocal. We have already noted Robinson's (1968) absence of enthusiasm for local authorities' practices. As early as 1972, the Committee of Directors of Polytechnics was discussing 'the most unfortunate and unproductive attitude by local education authorities towards polytechnics' though CDP policy was for polytechnics to remain within the local authority sector (CDP, 1972). Even LEA officers recognized the problem. One referred to the local authority in Plymouth exhibiting 'all the worst attributes of a small market town' and 'a determination to keep the polytechnic in its place' (Chadderton, 1973). CDP (1973) saw 'a real and urgent need' to review the controls on polytechnics and to establish a more appropriate structure for their government and financing. In 1974 the Committee recorded that there was too often 'much detailed control over very minor matters and little consideration of major issues' (CDP, 1974b). One director saw this in terms of the people involved. Writing to the Chair of CDP in 1976 he said ,

> it is enlightening to compare the calibre of individuals who sit on the UGC and 'control' – to a limited extent – the allocation of resources to universities, with the calibre of those who sit on local education committees and regional advisory councils and control – as they in effect do – the allocation of resources to polytechnics. It is not difficult to see why things are as they are.
>
> (CDP, 1976)

Another polytechnic director was more even-handed (Tolley, 1978). 'The polytechnics' crime, in the eyes of many,' he said, was 'their very success'. Their size, complexity, vigour and potential had 'caused dismay among some of the local authorities that created them'. Other LEAs however sought to 'encourage and promote the strengths of the polytechnics'.

Amongst the arguments for maintaining polytechnics within the local authority sector was that it helped to maintain local links and offered students in further education routes into higher education – the 'seamless robe'. Not all the polytechnics were convinced of this. One polytechnic director wrote to the Chair of CDP in 1976 saying, 'the "seamless robe" concept is a myth and we should explode it, if necessary' and that, 'in my experience, involvement with the community owes nothing at all to the local authority' (CDP, 1976). On the other hand, another director recorded in 1979 that he was 'unaware of any serious impediment to the work of my own institution over the years because it did not have corporate status' (CDP, 1979). But it was clear that he was in a minority. Not only were the majority of directors in favour of corporate status, so, too, were the majority of chairs of governing bodies in 1980 (CDP, 1980).

Nor did the passage of time mitigate the problems. Widespread concern was raised by disputes at Teesside and Huddersfield Polytechnics in 1978 and 1979, in which a factor was the apparent lack of financial support for the polytechnics. At Teesside, the CNAA visit found the Polytechnic 'beset with resource problems,' although its main concern was the poor quality of its leadership and the failures of its academic board. At Huddersfield, the local authority sought power to take over the running of the Polytechnic following an audit report (see below).

With these events as a backdrop, the polytechnics' concerns about governance rumbled on into the late 1980s. In the debate that preceded the 1988 Education Reform Act, the complaints of the polytechnics were summarized in a study conducted for the Committee of Directors of Polytechnics by my colleagues and me at the Centre for Institutional Studies in 1986. Our report recorded that, in principle, the existing arrangements had a number of strengths (Locke *et al.*, 1987). They recognized the place of polytechnics as part of the lifelong provision of education by the LEAs; the LEAs' responsibilities for funding the polytechnics and their ownership of the buildings. It was in keeping with the idea of the 1944 Education Act of education as a 'national system, locally administered'.

The report recorded considerable frustration by polytechnic directors at the restraints of local authority control. It summarized the perceived problems, noting that there were considerable local variations and that not all the problems were universal. The consensus, however, was that relationships between the majority of polytechnics and the LEAs 'were such that they impede effective management' (Locke *et al.*, 1987).

The report found that maintaining relations between polytechnics and LEAs was energy consuming and time-wasting. Many polytechnics lacked confidence about their own abilities to rationally manage their own affairs and senior managers in polytechnics were unsure about their 'scope for action'. Minor decisions frequently became blown up into politically contentious affairs. Some LEAs were seen as using administrative measures to impose their own political stances on polytechnics. The polytechnics suffered from pressures to use local authority purchasing arrangements and services for maintenance. There was confusion over capital programmes and responsibility for buildings, maintenance and repairs. Problems also arose from polytechnics being included in local authority union agreements and from local regulations regarding the establishment and appointment of non-teaching staff.

Polytechnics felt that the authorities interfered in the affairs of an institution able to manage itself. They felt hindered from effective management by inappropriate and outdated procedures for annual estimates, and by limitations on expenditure decisions. The polytechnics did not have their own bank accounts; they could not borrow money; they were subject to the financial and employment rules of the authorities. This contrasted with their aspirations and was felt to be inappropriate to major institutions of higher education. The polytechnics were threatened by the power which LEAs derived from their financial control.

The report proposed two possible solutions, in both cases giving the polytechnics their own legal existence as corporate bodies. The report suggested that they could become companies limited by guarantee and registered charities, along the lines of the Inner London polytechnics. They would be legally responsible for their own income and expenditure, obviating the need for LEA control or interference. They would own or lease their buildings and employ their own staff. The local authority would probably have a smaller representation on the governing body.

With corporate status, the report suggested two ways of funding. One was through local authorities, again along the lines of the Inner London polytechnics. The polytechnics would technically be 'aided' rather than 'maintained' institutions; the polytechnics' independence would need to be guaranteed by new financial regulations agreed with the LEAs. Alternatively, funding could be through a central body. The report marginally favoured this option, though it did so more in hope than expectation.

## *The local authorities' views*

There were wide variations between LEAs in both practice and perceptions of the relationship with their polytechnics. The authorities themselves varied in size, wealth and political complexion. They included the largest county councils, with populations of more than a million, and small London boroughs with less than 250,000. The latter might nonetheless be maintaining a polytechnic larger than that maintained by a large and wealthy county.

For the local authorities, the main problem was the perceived lack of control over the polytechnics. The authorities' responsibility to determine the 'general educational character' of the polytechnic was felt to be illusory (Fowler, 1988b). Authorities did not have suitable expertise or experience to deal with major institutions of higher education. In most cases, the polytechnics were the largest single institution for which the authority had responsibility. This tended to mean that authorities were anxious to control polytechnics' costs.

However, 'maintaining' a polytechnic did not mean that the authority was actually finding the funds directly. As we saw in Chapter 7, the pooling system absolved maintaining authorities from direct responsibility for most of the funding. All or nearly all they spent would be recovered from the pool. One polytechnic director suggested that the LEAs with polytechnics benefited financially from them, gaining more from the AFE Pool than they contributed, with the benefits of increased cash flow from pool funds and the charges they levied on their polytechnics for the central and administrative services (Nuttgens, 1981). In many cases, however, the pool funds and other income (such as student fees) did not quite match expenditure, so this extra cost was borne directly by the local authority. It was a cause of much bitterness in the authorities, where it was referred to as a 'deficit' even though the authority was responsible for the budget.

Generally, the activities of polytechnics were not widely understood by local authorities, by comparison with, say, schools. Similarly, the authorities identified less with institutions with a regional or national function than with their local schools directly serving local people. In 1988, some members in some authorities were happy to lose the responsibility for polytechnics.

This feeling of lack of control and responsibility was enhanced by arrangements for governance of polytechnics. Despite their protestations, the polytechnics had substantial autonomy in academic matters and significant financial and administrative responsibilities. This was a greater freedom than that of most local authority institutions and was often resented by members.

The local authorities' frustrations were exemplified by events at Huddersfield, starting in 1979. The problems between the Polytechnic and its local authority, Kirklees council, followed a financial audit in 1979 which led to allegations of maladministration of financial and other affairs. The Council's finance sub-committee threatened to seek the consent of the Secretary of State to take over the day-to-day running of the Polytechnic and demanded that disciplinary action be taken against those responsible (Jobbins, 1980). The committee of governors elected to deal with the matter refused to talk to the Council until they had received the audit report. Following the first meeting between the two sides in February, which foundered on the governors' insistence that the Rector should take part, the Council carried out its threat to seek permission from the Secretary of State to take over the running of the Polytechnic for at least a year (*THES*, 1980a) and, towards the end of February, presented the Polytechnic with a questionnaire requiring details of staffing levels, administration tiers in different departments, student : staff ratios and financing arrangements to which they required an answer in six weeks, and instigated a second audit to cover areas not included in the first. The Secretary of State refused to be drawn into the dispute.

By April 1980, the governors were accusing Kirklees Council of using the audit report as a 'springboard' to gain control of the Polytechnic, and were themselves asking the Secretary of State to intervene (*THES*, 1980b). While they conceded that the audit showed 'some irregularities and procedural deficiencies' the overall loss shown was only £10,000, compared to an overall budget of about £12m, and they did not believe it justified the actions taken by the council. Meanwhile a writ was issued asking the authority to meet legal costs. Following a change of political control in the local authority, Sir Frank Layfield was asked to conduct an inquiry into the allegations of financial mismanagement in the first audit report, but the local authority never published the report.

Meanwhile, CNAA, alerted to the under-resourcing of the Polytechnic during a series of review meetings with senior staff, told the Polytechnic and the local education authority that £481,000 was urgently required to safeguard the standard of work at Huddersfield; if it could not be found, then all student enrolments could be suspended. With a 15 per cent cut to its budget following the capping of the AFE Pool, Huddersfield had been particularly hard hit, Kirklees repeatedly stating that no extra money was available. However, following talks, a strategy of freezing posts, early retirement and voluntary redundancy, as well as extra money from the Council, was worked out and the crisis averted (Flather, 1980b). But in May 1981, the report of the second audit again contained accusations of financial mismanagement, including a general lack of accountability, inefficient record-keeping, poor security, and an 'air of mystery' surrounding the use of the Polytechnic penthouse flat (Flather, 1981c).

However, as the Polytechnic took steps to shed over 100 academic staff to meet its commitment to CNAA, relations between the Council and the Polytechnic took a turn for the worse. It was at this point that the Polytechnic received a review visit from a CNAA team who were so alarmed that they considered withdrawing approval immediately. Following the visit the CNAA wrote to the Rector expressing its concern:

> Serious mistrust, disunity, backbiting, and bids to extend political power within the Polytechnic well beyond the terms laid down . . . in the articles of government . . . are no basis for the maintenance of academic standards and constitute a wholly inappropriate environment for the education of students. The governors are not united behind the rector and academic board. . . . The maintaining authority is not keeping a proper detachment from the governing body as required by the spirit of the articles of government.
>
> (Flather, 1981b)

The Polytechnic was given three months to put its house in order or the CNAA would withdraw approval for all courses. The Polytechnic promptly set up a working party to review its academic structures, the roles of governors and the local education authority, and the instruments and articles of government. In June, the progress made by the Polytechnic led the CNAA to cancel the threat of withdrawal of approval and, in a letter to the Rector, to commend the 'serious and competent' way the Polytechnic had approached its task.

In December 1981 differences between the Council and Polytechnic re-emerged as academic staff resisted proposals to alter the composition of the governing body, increasing council representation from 10 to 12, with nine members from industry, commerce and the professions appointed by the local authority instead of the governors, and the number of internally elected staff governors reduced.

A leader in the *Times Higher Education Supplement* (12 September 1980c) perceived the dispute as raising the issues of the rights of governors under the articles of government and so the degree to which the polytechnics possessed effective academic autonomy. The leader concluded, however, that it was 'important to see the Teessides and Kirklees as the isolated incidents that they truly are'. It went on: 'Extreme cases always make bad law. Any temptations to use these unfortunate incidents as a political ladder into the meta-world of quango-land should be severely resisted'.

But it was not easy to avoid the temptation. Similar disputes arose elsewhere. At Leeds, the police seized Polytechnic financial documents in 1980 following an audit report, though the matter was later dropped. At the Polytechnic of Central London, the Rector attacked the ILEA for 'severely hindering' the efficiency of the ILEA polytechnics. ILEA councillors suggested that the Rector should resign in 1981, in a dispute about financial difficulties, and an audit report in 1982 confirmed a lack of accountability and control. The senior managers at the Polytechnic were reported to have called on the Rector to resign (Jones, 1982). Things were not always so bad. At Kingston, an agreement was reached in which the local authority would offer the Polytechnic greater freedom on spending, staffing and maintenance if it met income-generation and student : staff ratio targets (*THES*, 1986). At Sheffield there was – unsuccessful – discussion of a proposal to make the Polytechnic a corporate body with charitable status.

## *From Oakes to incorporation*

The continuing debate about polytechnic governance was intimately bound up with wider issues, including the arrangements for funding the polytechnics which were discussed in Chapter 7, and for the overall development of the sector, to say nothing of the role and function of local government. In 1977, the government inquiry under the chairmanship of Gordon Oakes into the system of management and control of higher education in the maintained sector in England and Wales considered, *inter alia*, college government. It confirmed that there was

> a wide variety in the way in which institutions are in fact managed, and it is a common complaint . . . that some local authorities intervene in the detailed management of their institutions so as effectively to prevent governing bodies from exercising the responsibilities for management entrusted to them by their institutions' articles of government.
> (Oakes, 1978)

The Oakes Report concluded that local authorities should maintain their role in higher education but that the retention of detailed establishment control by LEAs was unreasonable and probably uneconomic. Nationally, it recommended the establishment of a new National Body to advise the Secretary of State and the local authorities on the total provision and to allocate funds for recurrent expenditure and to oversee the development of maintained higher education.

At the local level, Oakes recommended LEAs should give institutions the maximum freedom to manage their affairs, particularly giving governing bodies operational freedom over the appointment of all grades of staff, in purchasing and contracts. There should be rules permitting carrying over at least part of savings made by an institution, and control on the basis of rolling rather than annual programmes. Academic board should have access to relevant financial information and the governing body should takes its advice into account. The polytechnics broadly welcomed the Oakes recommendations, though CDP had detailed concerns (CDP, 1978). None of the recommendations were taken up by the government at the time, though later a National Advisory Body was established (see Chapter 7). But the debate continued.

The question of the freedom of operation of institutions was raised again when a House of Commons Select Committee investigated the funding and organization of courses in higher education in 1980. In evidence to the Select Committee, the Committee of Directors of Polytechnics argued that the polytechnics should be removed from the control of the LEAs and placed under the control of a national body. The opposing arguments were presented by the local authority associations, but the question was apparently settled by a submission from the Secretary of State which came down on the side of the LEAs. However, the Select Committee said that it would only be acceptable for local authorities to retain their stake in higher education 'if all of them can restrain themselves from excessive and unreasonable interference in the running of large developed polytechnics with the skills and competence to look after themselves. At the very least, duplication of bureaucracy is unacceptable' (Education Science and Arts Committee, 1980). The Select Committee also advocated a new Committee for Colleges and Polytechnics be set up to advise the Secretary of State on the planning and funding of all maintained higher education. The government responded to the Select Committee's report by publishing its consultative document proposing two models for a central body, one retaining the LEA role, the other with central funding (DES, 1981b).

The LEA associations continued to argue that the composition of some articles, including the model articles contained in Circular 7/70, impeded LEAs in the exercise of their statutory, financial and employment obligations, which had changed and increased in scope during the 1970s (CLEA, 1981). The LEAs argued that it was necessary for them to alter financial estimates during the course of the financial year; to have greater control over staffing establishments; the power to redeploy staff both within and between institutions; a reserve power to dismiss staff without the support of the governors; increased control of courses; and power to close existing courses and launch new ones. A corollary of this was a reduction in the powers of academic boards, that overall responsibility for college management should be withdrawn from the Governing Body, and that the governors be made accountable to the LEA.

But other events had great influence on the role of local authorities in polytechnic governance. The decision of the incoming Conservative government in 1979 to cap or cash limit the AFE Pool precipated developments. As we saw in Chapter 7, a central mechanism was needed to allocate the funds, and the government wanted to introduce 'normative' elements into the allocation (Jones, 1984) instead of the retrospective process of the past. The establishment of an 'interim' National Advisory Body to advise on the allocation of the pool funds changed the role of local authorities. NAB was composed of representatives of nearly all the main stakeholders in public sector higher education (the government, the authorities, the polytechnics, employers, trade unions, etc.). This meant that a national view of the distribution of polytechnic provision (and that in other non-university institutions) could be taken. NAB also diminished further the local authorities' direct control of overall financing (though not of detail), weakening their sense of ownership of their polytechnics.

The debate about governance continued, with polytechnics favouring varying versions of independence, though they were not agreed on the detail. CDP had long advocated corporate status broadly on the lines of the ILEA polytechnics. Some ILEA polytechnics, however, preferred direct funding from DES, and CDP gradually moved to this view. In a White Paper in 1987, the government announced a fundamental change, that – largely because of the variations in the way local authorities treated their institutions – it proposed to grant corporate status to the polytechnics and major colleges (DES, 1987a).

The White Paper accepted many of the arguments put by polytechnics and other colleges about the inappropriateness of control of predominantly higher education institutions by individual local authorities. The reasons included their national and regional role; the need for national planning arrangements; the inability of individual authorities to 'promulgate a policy for higher education' in their institutions; and the inhibition on good management in the current relationship between polytechnics and local authorities. It stated that simply granting corporate status to polytechnics and other colleges was not in itself sufficient to resolve the management difficulties. It proposed therefore to make the institutions 'freestanding outside local authority control'. They would have corporate status, governing bodies with strong representation of industry, commerce and the professions, employ their own staff and own their own land, buildings and equipment. The changes were introduced in the 1988 Education Reform Bill. This, when enacted, as the 1988 Education Reform Act granted the 29 English polytechnics 'independence' from local authorities as statutory corporations. Only in Wales did the polytechnic remain under local authority control, though it, too, eventually became a corporate body shortly before it acquired its university title in 1992.

At the time, however, few commentators – or polytechnics – actually anticipated that the government would take so radical a step. A Good Management Practice Group (GMP) of NAB, comprising representatives of polytechnics, colleges, LEAs and the DES had produced a consensus on the way forward, proposing corporate status within the LEA framework (NAB, 1987b). But the GMP report was pre-empted by the publication of the 1987 White Paper. Similarly, the report for CDP by Locke *et al.* (1987) reflected the authors' anticipation that this was as far as the government would go.

The White Paper finally settled the debate about governance that had plagued the polytechnic policy since before its inception. Its surprising decisiveness on polytechnic governance can be seen as one of the 'semi-convulsive' responses to 'overwhelming stimuli that have been permitted to build up a long time without treatment' described by Dror (1986), and a characteristic of policy making under these circumstances. Certainly the governance of polytechnics was a long running issue which had not been treated. In the end, the government decided to settle it, once and for all.

But the change needs to be seen in the wider context of change to the educational system as a whole in the 1980s. Again, broader issues combined with the continuing concerns about polytechnics to promote change. The Education Reform Bill itself was the culmination of a wider debate about education initiated some ten years earlier by the then Prime Minister James Callaghan when he raised the charge of what later became called 'producer domination' in education (Butler *et al.*, 1985). The issue gained prominence under the Conservative Government, fuelled by public as well as political concern about teachers' strikes. A second factor, more relevant to polytechnic governance, was the 'steady deterioration' (Maclure, 1989) in the relationship between central and local government in the 1980s, centred around the policies and practices of some 'hard left' local authorities. The Education Reform Bill proposed to substantially diminish local authorities' functions in education generally, for example by enabling schools to have greater responsibility for their own management with a wider range of responsibilities for their governing bodies, and by the idea of competition between institutions responding to the 'consumer' demands of parents, employers and students. In this context, it was not surprising that the Bill proposed to grant polytechnics and other major colleges corporate status and to fund them centrally through a new funding council.

## Corporate status

The Education Reform Act affected polytechnics in two main, related ways. Governance and financial reforms were, inevitably, interrelated. The Act addressed both the problems of funding the polytechnics (and other major colleges offering higher education in England) and their relationship with local authorities, by removing them from the local authority sector and funding them through a central funding council. (In Wales, as we saw in Chapter 7, the polytechnic and colleges remained under local authority control.) The English polytechnics, colleges with more than 350 full-time equivalent students on advanced courses comprising at least 55 per cent of the total enrolment, and colleges with at least 2,500 FTEs on advanced courses all became eligible for corporate status. Other colleges not meeting this requirement could also do so in certain circumstances. They, and advanced work in the remaining colleges under local authority control, were to be funded through a new Polytechnics and Colleges Funding Council (PCFC).

The higher education corporations were to be established by order of the Secretary of State; Schedules to the Act set out the details of its composition, its powers and Section 125 the requirements of the articles of government, which were to be made by the corporation but approved by the Secretary of State. Other parts of the Act set out the details of transfer of property from local authorities to the new corporations, and other matters.

The structure of governance required of the new corporations in the 1988 Act, whilst it still reflected the division of responsibilities of the Weaver Report and the 1967 Administrative Memorandum, set this in an overtly executive, managerial context. Governing bodies, for example, were to be much smaller, with wider responsibilities. The 1987 White Paper envisaged governing bodies with 20 to 25 members. Schedule 7 specified that the corporation would consist of between 12 and 24 members appointed by the Secretary of State plus the principal of the institution (unless he or she chose not to be a member). This halved the size of most governing bodies of polytechnics (Thames for example had 51 members). Up to 13 'independent governors' had to be people with experience of or showing capacity in industrial, commercial or employment matters or the practice of any profession. The independent governors had to be a majority on the governing body. This, together with other requirements of the Schedule, substantially diminished the local authority's presence on the governing body, and reflected the government's concern that the institutions should serve economic and national needs. Local authority representation was limited to not more than three; the polytechnic nominees could be no more than five.

The Act also made clear that the governors were to have very substantial responsibilities. The articles had to include the power to determine the educational character of the institution, the approval of estimates, ensuring its solvency and safeguarding its assets. Governors could not delegate these responsibilities. Additionally, PCFC requirements to ensure 'efficient, economical and effective management' of the institution had to be met. Then there were all the normal duties and liabilities imposed by law on directors of companies which were likely to bear more heavily on members of boards of governors than company directors because of the limits on delegation.

Since the polytechnics were charities, the governors were also personally responsible and liable as trustees under charity law.

The date for the establishment of the higher education corporations (Vesting Day) was 1 April 1989. By then new boards of governors needed to be in place. In December 1987, the Secretary of State wrote directly to existing chairs of governors of polytechnics (as did the Minister to existing directors) proposing that informal groups be established for each institution to help identify potential members of the new governing bodies. Although external consultants appointed by the Secretary of State considered the names put forward, it was largely the recommendations of these 'formation committees' which determined the nature of the new 'independent' governors. It was not always easy to find candidates, and some polytechnics were unprepared for the speed with which it was necessary to act. Although CDP favoured the move, some polytechnics resented the haste, as this was before the legislation had been debated (Yarde, 1988a).

There was dispute, too, about the nature of the new governing bodies. Some polytechnic directors saw the chance to establish a more 'managerialist' model of governance than that proposed in the White Paper, with little or no representation of academic staff (Yarde, 1988b). There were questions whether staff should be excluded from committees concerned with employment matters.

In the event, the provisions for governance in the Education Reform Act broadly followed the White Paper. Most of the polytechnics opted for governing bodies at the upper end of the size range. Of the 24 English polytechnics (excluding those in ILEA) reported on by Bastin (1990), 14 had over 20 members and seven had the maximum 25. Only Oxford Polytechnic had the minimum 13. (In all cases the director of the polytechnic had elected to be a member.) Despite initial concern in some polytechnics that it would not be possible to find suitable independent governors, the positions were filled. At the time of their appointment, 59 per cent of independent members (of 51 corporations analysed by Bastin) were drawn from registered companies. Nearly all were directors; the remaining fifth were managers; half were classified as chairmen, chief executives or managing directors (Bastin, 1990). Over half were from large companies, 55 per cent of which were classified as 'industry'. More than four-fifths of polytechnic governors were men (MacGregor, 1990a), most of the chairs of governing bodies were independent members and at all but one polytechnic were men, raising concerns by the Equal Opportunities Commission (MacGregor, 1990b); only 2 per cent of governors were nominated by trade unions.

Some of the balance was redressed by the other governors. Most polytechnics appeared to wish to have substantial LEA representation. Ten of the 24 English polytechnics opted for the maximum three local authority nominees, and eight for two nominees. Eighty-four per cent of these governors were elected members. The 1988 Act entitled corporations to include up to four 'additional' members. The polytechnics opted for, on average, two of these. Two (Bristol and East London) had four, but 13 of the 24 had only one. All but four polytechnics opted to have academic nominees (a teacher elected by the academic board); over half had two. Bastin (1990) concluded that the government had had some success in attracting people in senior positions in industry and commerce to governing bodies, though he questioned the wisdom of the dominance of senior managers and men. So successful was the attraction of governors from the private sector that Bargh *et al.* (1995) found that the 'new universities' (including both former polytechnics and colleges) had fewer governors with local authority connections than the old universities. The governors in new universities also believed more strongly that the institution should be run as a corporate business. The views of governors on many topics were surprisingly similar in both old and new universities, and the major differences in both sectors were between academic and external members, suggesting that university status for the polytechnics would not necessarily resolve the conflicts between the interests of the academic community and the wider society.

## Managing the corporations

For the polytechnics incorporation meant many changes. A typical senior manager's view by the early 1990s was that of one Vice-Chancellor of a 'new university': he opined that no polytechnic director regretted the advent of incorporation (Gould, 1994). Incorporation for him meant welcome relief from the financial constraints imposed by local authority control; the polytechnic could now have its own bank account and was no longer subject to LEA priorities and detailed procedures. It could borrow money and, up to a point, operate with a deficit. There was no LEA constraint on personnel policies; the notion of a staff 'establishment' no longer existed and the rigidity of salary scales and gradings was diminished. The Polytechnic now owned its own property and was in a position to plan expansion; under the LEA an 'estates strategy' was unknown. LEA dominance of the governing body had ceased; LEA governors had had limited understanding of higher education, and tended to short-term policy making. Now there was a 'private sector ethos', a line management structure, and strategic thinking; the polytechnic had a mission statement and objectives.

However, incorporation also brought its problems. As Gould (1994) put it, 'liberation is not freedom'. In particular, the funding council imposed heavy accountability and auditing requirements; the Polytechnic was subject to six different audit procedures, and audits were public documents. It had to provide payroll services (some polytechnics contracted their LEA to do this). The new 'market orientation' meant uncertainty of funding as well as tighter contractual obligations to the funding council.

The polytechnics faced these challenges for the most part by conforming to what Kogan (1989) criticized as the new 'managerialist' culture, implicit in the 1987 White Paper, and promoted in higher education through the publication of the Jarratt Report on university management (CVCP, 1985), and the Croham Report on the University Grants Committee (Croham, 1987). Managerialism was described by Kogan (1989) as based on the assumption that 'the institution, and the system to which it becomes subordinate, can specify objectives within which those of the basic units can be subsumed'; a further assumption was that the determination and control of these objectives is hierarchical. The managerial model drew heavily on 'the borrowing of business practices and the language of business' as one polytechnic senior manager put it (Green, 1989), and this was evident in the model articles of government drawn up by the DES for the new corporations. The director or principal was referred to as the 'chief executive' and the governors were to be responsible for the 'mission' of the institution. Most polytechnics responded by producing mission statements and strategic or corporate plans (thus confirming to an extent Kogan's concerns about the subordination of basic units and of hierarchical control). They sought the advice of private sector management consultants on a range of issues, from the development of business plans to structures of directorates, salary and grading of senior staff and management information systems (Fielden, quoted in Green, 1989).

Oddly, one development that might have been anticipated did not happen. Despite the many references to the characteristics of the private sector by the government, all of the polytechnic directors appointed after the announcement of incorporation in the 1987 White Paper came from within the education service. Of 17 appointments to 1993, 13 were either internal promotions or from another polytechnic (Table 8.1). Two were from other higher education institutions, one from HMI and one from NAB. Nor was the executive style always accepted by the new appointees. At Portsmouth, the president designate stood down after three months because of the insecurity of the three-year contract (*THES*, 1990c). The narrowness of the recruitment base compares with the first appointments when polytechnics were designated in the late 1960s. Then, three directors were appointed from industry, as well as six from universities (Locke, 1974). The polytechnics appeared to have more commitment to executive managers in the 1960s than in the 1990s.

Green (1989) identified other common features of emerging managerialism: most polytechnics strengthened their senior management team; paid their senior staff significantly higher salaries; most moved to an 'executive' style of management, reducing the number of committees and strengthened 'line management' structures; and most devolved responsibilities to lower levels, such as faculties or departments, making these cost centres. Many directors and senior managers espoused the new doctrines with enthusiasm. Leyland (1987) advocated corporate planning in polytechnics before the 1987 White Paper had even been published, and most polytechnics introduced changes in management structures in anticipation of incorporation. At Wolverhampton Polytechnic, the directorate was cut from seven to four, the faculties from six to three and the 20 departments were reorganized into 12 schools (Scott, 1987).

*Table 8.1* Previous post of directors appointed to polytechnics between 1987 and 1993

| *Polytechnic* | *Director's previous post* |
|---|---|
| Birmingham | Same |
| Brighton | Polytechnic |
| Bristol | Polytechnic |
| Central London | Same |
| City of London | University |
| Coventry | Internal |
| Hatfield | College of Technology |
| Huddersfield | Same |
| Kingston | Same |
| Lancashire | Internal |
| Leeds | Same |
| Leicester | Internal |
| Liverpool | Same |
| Manchester | Same |
| Middlesex | Polytechnic |
| Newcastle | Same |
| North London | NAB (ex-polytechnic) |
| North East London | Internal |
| North Staffordshire | Internal |
| Oxford | Same |
| Plymouth | Internal |
| Portsmouth | Internal |
| Sheffield | Same |
| South Bank | HMI |
| Sunderland | Polytechnic |
| Teesside | Polytechnic |
| Thames | Same |
| Trent | Polytechnic |
| Wales | Same |
| Wolverhampton | Same |

There were, of course, compelling reasons for these developments. In addition to the demands of the 'enterprise culture' into which the polytechnics had been placed, there was a real need to plan their development on a longer-term and strategic basis than had often been possible under LEA control. There were more mundane needs, too, to employ and manage additional staff for the functions now exercised by the polytechnics rather than their maintaining authorities. There was also a need to tighten up managerial structures and processes in some cases, as events at the Polytechnic of North London had shown in the 1970s and mid-1980s. Here, in the first instance, there was a series of disruptions of Court (the governing body) and academic board, centring around the suspension of a Head of Department and leading to an unfavourable CNAA report. The Court was heavily criticized in a controversial account by Jacka *et al.* (1975). Even in those early days, the tightening of managerial control was seen as necessary, though criticized as the dismantling of 'an independent, democratic institution' and its replacement by a 'high command, which is itself merely an agency of government' (Campbell, 1974). Then, in the 1980s, disruptions at PNL and court hearings were precipitated by the admission of a student, Patrick Harrington, alleged by the student union magazine to be a member of the National Front. The Polytechnic's handling of the events was criticized by a committee of inquiry set up by the LEA, chaired by a former senior HMI; both the Court (governing body) and the management were found wanting (ILEA, 1985). The events and the committee's suggestions for a smaller Court and improvements to routine management formed part of the context of the move to managerialism.

It was accepted, even by such critics of managerialism as Kogan (1989), that there were substantial and legitimate management functions that institutions, including universities, had to accept and perform, including securing and distributing resources, attending to outcomes and evaluating performance. Nor was the managerial tradition new to the polytechnics. Historically, they had always had a managerial structure. Heads of Department, and sometimes Deans of faculty, were permanent appointments, rather than rotational as in many universities, with management responsibilities. The grading structure of teaching and non-teaching staff had always been hierarchical, more so than in universities. As George (1993) pointed out, the traditional universities had always been under-managed, but he also argued that the polytechnics, when they became new universities, were over-managed. Although the emphasis on academic professionalism in the old universities had 'delivered academic performance' particularly in research, the managerialism of the polytechnics had delivered greater numbers of graduates at less cost with measurable quality assurance processes. The concept of the market, too, was not alien to polytechnic culture, no more than was the ideal of serving the customer or client; indeed it was explicit in the notion of the 'service tradition' (Burgess, 1977). What caused concern was the danger of 'unreflecting managerialism' (Kogan, 1989) and the way in which it altered the balance, found in all institutions, between what Kogan called the 'dependency model' of institutions simply meeting national manpower and economic needs, and the autonomous model, where institutions facilitated the pursuit of truth, predominantly by individuals, in a collegium.

## Academic governance

This shift of balance became evident in the way that incorporation affected the arrangements for academic governance within institutions. The Weaver Report and Administrative Memorandum 8/67 envisaged the polytechnics as conforming in some important respects to the collegial model, particularly in the way in which the academic board was responsible for the academic work of the polytechnic.

Moreover, consistent with the spirit of the times, there was a strong element of academic democracy built into the arrangements. We saw earlier that ministers had insisted on adequate representation of students in governance. Only one polytechnic, Sunderland, had no student governor initially, as this was one of the earlier designations, and its instrument of government was subsequently updated. The Administrative Memorandum also required at least five academic members and at least one further member elected by the teaching staff as a whole on the Governing Bodies. Academic boards were to consist of the director of the polytechnic (as chair), all Heads of Departments, other senior officers, such as the deputy director, librarian and chief administrative officer, and teaching staff members chosen by the teaching staff in a way that would 'secure coverage of the different fields of work'. Very soon, by December 1968, an agreement between the National Union of Students and the local authority associations briefly (it was later revoked by the NUS) recognized the importance of student participation in the academic community, though it did not commit itself to formal student representation on governing bodies or academic boards.

Cox and Marks (1975) found that academic boards in polytechnics had an average of 48 members. All had students as voting members, on average constituting 12 per cent of the board. The majority of members were ex-officio; in 28 of 30 polytechnics these outnumbered elected members.

These arrangements for academic governance raised concerns from the start. They were, of course, part of the overall system of governance and suffered from its general problems; it is difficult to isolate the operation of academic boards from the governance of the institutions as a whole, particularly since there are few empirical studies (though plenty of polemics) on the issue. Locke (1974) set out some of the anticipated problems. The emphasis on teacher and student representation on academic boards meant that these bodies lacked full knowledge and power over resources. Academic boards tended to be large, raising the danger of unmanageability, and the need to create committees lengthened the decision-making process. If decisions could not be effectively made by academic boards and committees, then they would be taken by the executive, heightening the power of the director. In the early years of the polytechnics, according to Bland (1990), these problems were not very evident. His view seems rather naive, but it does note the expansionary context of the times ('governments were so keen to give money to higher education'!) that 'most decisions that such boards took' were handed down to departments 'who took on more staff and graciously accepted increasing annual grants'. At the time, academic boards with around 40 members were already felt to be too large; they were rarely seen as the seat of power in the polytechnics (Coombe Lodge, 1970). One director of education spoke of the need to get the academic board 'responsible – in a moral as well as legal sense – for its actions and policies' (Chadderton, 1973).

Subsequent years confirmed the accuracy of many of Locke's (1974) predictions. HMI (1983a) reported that at one polytechnic the committee system 'seems to be designed to ensure that every member of staff has an opportunity to express their view point'. The Director of Nottingham was typical in proposing after only a year of designation to revise the structure and operation of the academic board and its committees, to reduce duplication, increase the efficiency of decision making and provide 'a more comprehensive pattern of academic policy making' (Hedley, 1980). Polytechnics were not, of course, unique in encountering these difficulties of academic governance. Bland (1990) commented that if a university senate was stripped of its committees and allowed a ten-minute meeting once a term, 'it could do all the things it has power to do'. The polytechnics, however, produced some spectacular problems. The CNAA visit to Teesside Polytechnic in 1978 which precipitated a major crisis and the departure of the Director also commented on the 'lack of initiative being taken by the Academic Board' (Silver, 1990). The CNAA report concluded that the 'real failure of the Polytechnic' was that it had not established 'a community of academics with a corporate identity and with sound machinery for democratic decision making' (quoted in Silver, 1990). A CNAA report in 1981 on South Bank Polytechnic recorded concerns that the academic board was not sufficiently developed to detect threats to academic quality (Flather, 1981a).

At the Polytechnic of North London, the academic board was implicated in the critique by Jacka *et al.* (1975) of the series of disruptions of Court (the governing body) and academic board in the 1970s. They recorded a number of occasions when student members, or non-member students, disrupted its business and alleged that its domination by student representatives, who constituted 36 per cent of its membership, was an important factor in the 'degeneration' of PNL.

Whatever the justice of this claim, it became clear that the issue of academic governance was to be bound up with the constitutional changes in the late 1980s when the polytechnics became corporate bodies. The new managerialism did not accommodate governing bodies of approaching or exceeding 50 members and extensive elected representation. The collegial model was, after all, the epitome of 'producer control'.

The financial and other pressures that the higher education system faced from the mid-1970s also had their effects on academic governance. Davies and Morgan (1982) had characterized the main organizational models in higher education. At that stage, they saw the 'political' and 'organised anarchy' models as having more affinity with the current uncertain situation than 'bureaucratic' or 'collegial' models. The circumstances militated against joint policy decisions, because of their slowness and the ambiguity of the situation. Davies and Morgan's case study of North East London Polytechnic showed that building consensus encountered increasing difficulty as the lead time for decision declined and the pressures for contraction increased. Their analysis pointed to the importance of leadership at the top and middle management levels, rather than the traditional mechanisms of academic governance.

Cuthbert (1988), discussing the challenges facing institutions 'going corporate,' considered the 'new role of governors' and the 'new role of managers' but not the role of academic boards. He reflected the spirit of the times in his section on academic leadership, which nowhere mentioned academic boards, and in his statement that 'direct academic leadership should be located primarily at the middle management levels . . . .' though he noted that there was 'already a reluctance on the part of some academics to sacrifice their academic role for a more managerial role in an institutional directorate'. Middlehurst and Elton (1992) noted that leadership becomes increasingly important in times of rapid change, but that staff at many levels in higher education expected it to be exercised by groups as well as by individuals. They commented that the stresses on the system of the last decade had led to a focus on managerial rather than leadership values.

The new spirit of the times is evident if these comments are contrasted with an analysis of the climate of an academic department in one English polytechnic in 1978. Juchan (1982) reported that staff and students here felt it was 'cosy,' 'easy-going,' 'gentle' and 'caring'. Few in the late 1980s would have reported this. Halsey (1992) described the increasing pressures on higher education as compelling 'proletarianization' of the staff; 'morale is at a low ebb'. Middlehurst and Elton (1992) concluded that the encouragement of competition at all levels and other developments had 'constituted an active discouragement of collegiality, leading to a loss of morale and trust in many institutions'.

## University status

The last event in the history of polytechnic governance was their accession to university titles. The polytechnics had barely had the chance to experience their existence as statutory corporations before further constitutional changes were imposed upon them, with the 1992 Further and Higher Education Act. The 1992 Act finally conceded their longstanding wish. Although their new title was perhaps the most visible provision in the Act for the polytechnics, it also enabled them to award their own degrees, unified the funding mechanisms for the polytechnics and universities, and made further changes to their governance.

The issue of title went back at least as far as 1968 when Robinson referred to the British image of a polytechnic as 'an educational soup kitchen for the poor' (Robinson, 1968). He argued, not entirely convincingly, that the important academic and constitutional differences between polytechnics and universities justified the difference in title, but it was clear that the status of the university title was important, since Robinson claimed that the polytechnics were already universities in many respects anyway and described them as colleges of a national university. The polytechnics themselves, individually and collectively, raised the issue repeatedly. It had revived in the debate before the 1988 Education Reform Act in CDP discussions, and

Newcastle, Plymouth, Portsmouth and Middlesex Polytechnics were reported as favouring the change (Yarde, 1988c). The shadow governing body of Hatfield Polytechnic – unsuccessfully – proposed a change of title, in defiance of CDP policy. Robinson proposed (Robinson, 1991) that polytechnics should act unilaterally. The government indicated that a change of title could not come before new legislation planned for 1994, but CDP argued that it could happen under powers in the Education Reform Act. Fowler (1991) described the argument with the DES as a 'dialogue with the deaf'. In the event, the government moved to legislation more quickly than 1994.

The government's new views on the issue were set out in a White Paper, *Higher Education: A New Framework* published in May 1991, just two years after the polytechnics formally achieved independence from the LEAs. The White Paper (DES, 1991) did not rehearse arguments (one distinguished American commentator was astonished to learn that it was not an executive summary). It considered, however, that its proposals to unify funding and grant degree-awarding powers to the polytechnics and some major colleges pointed 'decisively' to allowing the polytechnics to use the title of university: the title 'polytechnic,' it said, had 'never been widely understood'; it made them a second choice for school leavers and 'in their international contacts, polytechnics still . . . have to explain that they are not further education or sixth form or technical colleges'. The White Paper proposed that polytechnics and colleges seeking title changes should use the existing procedure for universities for changes to their statutes, of submission to the Privy Council. Whilst the title change did not entail their departing 'in substance' from their present management structures, 'some detailed changes to instruments and articles of government may be needed'.

The changes to the instruments were embodied in the 1992 Act. They did not materially affect management structures (since this is not a matter for instruments of government) but mainly altered the obligation to have governors appointed from the polytechnic. Up to two could be teachers nominated by the academic board and up to two could be students. There were greater powers to coopt. At least one coopted member was required and up to nine were permitted. The instrument thus permitted the end of staff and student representation, making these optional. Even where a governing body chose to retain them, their number was reduced from a maximum of five to four, though oddly, more students were now permitted than before. The National Union of Students nevertheless called the changes 'an appalling attack on democracy' and NATFHE noted the contrast with current practice even in entrepreneurial institutions, which sought to secure representation of their workforce 'to make them feel part and parcel of its mission' (*The Guardian*, 18 September 1991).

The final step to university status for polytechnics was now the preparation of their proposals to the Privy Council. In anticipation of the 1992 Act, the Privy Council Office offered guidance in September 1991 on the process and the requirements for a suitable name. The Council expected that any proposal would be accompanied by evidence that the views of interested parties had been sought, particularly those of neighbouring institutions, local authorities and employers. The name itself should not be the same as or 'too like that' of another university, misleading or offensive (De Deney, 1991).

This set of requirements precipated minor farce in some quarters, and the last skirmishes in the binary battle. The obvious university names for many polytechnics had already been snapped up by the existing universities. Most polytechnics were aware of research showing that potential students were most knowledgeable about institutions named after a city (Keen and Higgins, *c.*1990). But there were already universities of Leeds, Birmingham, Sheffield, London and virtually all the cities in which there were polytechnics. The DES and the CDP warned polytechnics not to choose names which might look as if they were passing themselves off as their university neighbours (MacGregor, 1991). In London, it appeared that there might be an unseemly public squabble, with the University apparently citing its Statutes under the University of London Act 1898 as entitling it to control all higher education within a 30-mile radius. In the end, CDP received legal advice that there was no prohibition on the use of titles which included both 'university' and 'London'. Two London polytechnics simply added a directional epithet (North and East). Some petty local jealousies were reported. The University of Sussex changed its letterhead to read 'The University of Sussex at Brighton,' allegedly as a spoiling tactic for the proposed University of Brighton. A spokesman for Sussex was reported as saying, 'We do get irritated when people refer to the polytechnic as Brighton University. That is quite wrong of course. We are the university' (*The Times* 31 October 1991). But Brighton University got its name.

There were more substantive worries. Two directors were reported in 1991 to be unwilling to take up the offer to change title, but had changed their minds before the summer (Brookman, 1991a). Although the polytechnics were determined to have the title of university, there were those who lamented the loss of identity and tradition. But only one, Anglia, retained the term 'polytechnic' within its title, though it was debated at at least one other.

The 1991 White Paper also precipitated an unedifying race for CNAA accreditation amongst other major colleges, so that they would qualify for university status under the 1992 Act (as we saw in Chapter 6). Four additional polytechnics had been designated between 1989 and 1991 by fulfilling criteria set down by NAB, and thus qualified for university titles. Six other aspirants did not receive accreditation for research degrees in time and wrote to the Secretary of State in protest (Brookman, 1992a). One of these colleges managed to persuade CNAA at the eleventh hour (Brookman, 1992b) and later, Luton, which had had polytechnic aspirations, acquired a university title under the 1992 Act's provisions for recommendation by HEQC.

For the polytechnics where the issue of title was uncontentious, the Privy Council's provisional agreement on the first 14 new titles was announced on 16 March 1992. For them, and for the others as they acquired their new titles in the ensuing months, the polytechnic policy was finally ending.

## Conclusions

If there was a failure of the polytechnic policy, it was in the arrangements for governance of the institutions. The need for a sector under 'social control' was one of the key features of the Woolwich speech, and the formal structure of governance was the main element in the process leading to the designation of individual polytechnics. It was these, rather than educational matters, over which government had most control, and with which it might have expected to have been well equipped to deal; after, the DES was a professional bureaucracy, dealing here with bureaucratic matters. Paradoxically, it turned out not to be capable of establishing adequate governance arrangements. It is easy to be critical in retrospect. At the time, there was no obvious alternative for governance of a public sector. But the government failed to achieve the ideals of the Weaver Report, and to subsequently police the arrangements. The provisions of the 1944 Act for determining disputes between LEAs and institutions to the Secretary of State were not used to remedy unreasonable behaviour by LEAs or polytechnics.

Apart from the issue of their title, it was the failure of governance that led, ultimately, to polytechnics' unification with the university sector in 1992. The significant change was the 1988 Education Reform Act, which established them as statutory corporations, independent of the local authorities and centrally funded by a funding council very similar to that of the universities. Once the 1988 Act had been passed, the constitutional arrangements were already in place for the change of nomenclature and for the unification of funding in the 1992 Act.

The experience of polytechnic governance offers a number of lessons, and not just for higher education. It had implications for other parts of the education system, and for the system of local government as a whole. It is not too much to claim, as Robinson (1995) does, that polytechnic governance brought the whole idea of local democracy in education into disrepute; indeed it jeopardized the whole idea of local democracy itself. The derision with which some polytechnic directors regarded local authorities diminished the standing of both. The persistent difficulties with polytechnic governance offered a government anxious to diminish the power of local authorities in the 1980s an obvious excuse to start the process of divesting them of responsibilities. The polytechnics were a handy-sized chunk of the system to start with, not too big, and an easy target. The lack of any sense of loss by chief education officers in 1989 when their polytechnics became independent (Robinson, 1995) made it easy, and contrasts with the more modest, but more contentious moves in the same Act to enable schools to opt out. Later, the polytechnic precedent helped the government to remove the whole of further education from local authority control in the 1992 Act.

Robinson (1995) holds that the main responsibility for this 'fiasco' resided with the chief education officers of the local authorities, who lost sight of their role as educationists and chose to engage in a power struggle that they could not win. Whilst the officers may well have had this failing, they did not all do so, and not all the events can be attributed to them. A further problem arose from the corporate managerialism of local authorities, following the Bains Report (Bains, 1972). The corporate structure meant, for example, that local authority personnel or finance officers expected control over all personnel and finances, including those in polytechnics, and often failed to understand that the articles of government precluded this. Similarly, the polytechnic director was responsible to governors, not the chief education officer or the education committee.

The directors themselves, however, showed a capacity for petty spite and political ineptitude, and perhaps over-ambition. At least one polytechnic found itself having to rebuild links with its local authority after incorporation, in its own interest.

Local councillors, too, had their failings, and demonstrated a lack of breadth of vision; they could exhibit 'all the worst attributes of a small market town' (Chadderton, 1973). But these are inevitable characteristics of local democracy; in a sense, it is to enable restricted local views to be expressed. The task with polytechnic governance was to establish arrangements that accommodated these familiar features of local democracy and use them to advantage.. The problem was, at root, structural. The local authorities did not have any real sense of ownership of what were national institutions, and felt they had little power over their development, but were legally responsible for them. They often failed to establish overall education policy for their polytechnics and to determine their general educational character. For these reasons, Fowler (1988b) was right when he described the binary policy as inherently unstable. Sooner or later, it would have to change.

Paradoxically, the experience of the British polytechnics after they became independent of the local authorities in 1989 suggests a way in which the local authorities could have been more effectively involved in their development throughout. The new system of central funding involved the polytechnics in drawing up strategic plans as a basis for their development. Emerging practice in the independent polytechnics seems to be for the governing body to be seen as a partnership of differing interests. Its members have responsibility for the development of the institution to mutual benefit. They have particular expertise arising from their constituency bases, which inform the institution and its management, especially in the development of its strategic plan. The local authority representatives can act in this way, offering advice on and representing the needs of the local community in the development of the polytechnic's strategic policy. This is an unambiguous and respected function, contrasting with their experience of the previous quarter century. The paradox is that had the polytechnics had greater freedom from local authorities at their inception, perhaps through a form of corporate status, the local authorities could have made a more effective contribution to their development and achieved greater local involvement by the polytechnics.

# 9

# Whatever Happened to the Polytechnics?

This study has traced the development of the polytechnics in England and Wales from their inception in the mid-1960s to their achievement of university titles in 1992. It has shown that they were founded with distinctive policy aims, though these were not always explicitly or clearly stated in policy documents. Nevertheless there was a coherent and comprehensive 'idea of the polytechnics' though, again, this was by no means universally accepted, even in the institutions themselves. Despite these limitations, the polytechnic policy can be regarded as a kind of experiment in the way described in Chapter 1, and it is possible to 'test' the policy by asking how far the original aims were achieved by the time the polytechnics became universities. The hypotheses of the policy include the notions that differentiation between institutions in higher education is the most effective way to achieve the educational, social and economic aims of the policy; that a central validating agency is an effective way of enabling institutions to develop responsive and innovative courses; and that the arrangements for governance and funding are an apt way to administer and finance institutions with particular purposes.

There is a question, of course, of the validity of these policy aims some quarter of a century later. How far is it apt to test institutions in 1992 against the aims of 1965? Over a period such as this, new problems arise and the policy may be adapted to new purposes. Whilst this was true for the polytechnics, the aims of the polytechnic policy were remarkably robust, and ministers in the 1990s were praising their achievements in broadly the same terms as the aspirations of their predecessors in the 1960s and 1970s. Indeed, some of the aims of the original policy had become more evidently those of higher education generally. Expansion of higher education at lower cost, increased access to a wider community of students, a higher education relevant to economic and industrial needs, were the key features of the White Papers of 1987 and 1991 for the whole of higher education, just as they characterized the 1966 White Paper for polytechnics.

Not all the events in the polytechnics' history are attributable to the policy. Many were quite unintended consequences. The institutional panic and confusion of PCFC bidding in 1990 was a longer-term consequence of the decision to cap the pool in 1979, though no one at the time anticipated a funding mechanism quite like this (nor, as it happened, was there much anticipation of any funding mechanism). Moreover, in the intervening years, the polytechnics had become instruments of other policies, which in some cases had little to do with education. Some of the changes which substantially affected them were from wider political and social agendas; the change to their governance in 1988 can be explained in part as a result of the long-running dispute between central and local government. The polytechnic policy was not sufficiently robust to withstand these other pressures. In the late 1980s, governance acquired sufficent of the characteristics identified by Hogwood and Gunn (1984) for it to reach the top of a political agenda; it was reaching crisis proportions, it was particular, emotive and raised questions of legitimacy and power; and the polytechnics were a conveniently sized component of locally provided services to be removed from the sector. The complicated and quasi-contractual arrangements for funding, and the concern for quality assurance reflected a change in the nature of welfare provision toward what Scott (1995) describes as the 'audit society'. Governments have shifted from controlling inputs to auditing outputs of such provision. Often, as with governance, developments depended on the coincidence of issues which had been rumbling on separately for some time. The 1988 Education Reform Act evolved from the 'Great Debate' about education in general of the mid-1970s. Developments sometimes depended on prior events; the acquisition of university titles became much more straightforward once the polytechnics had corporate status and accreditation from CNAA.

Thus it was that a major policy change – the ending of the binary policy and the unification of higher education in Britain – took place almost casually. There was none of the elaborate analysis of the problems and alternatives advocated in the policymaking literature, and as noted in Chapter 8, the 1991 White Paper was thought by one commentator to be only an executive summary. But by then, the combination of events made the acquisition of university titles by the polytechnics almost inevitable. Britain did not exactly transform its higher education system by accident, but it could hardly be called planned.

Things are rarely so definitive in public policy to permit a single, simple answer to the question: was it a success or a failure? This study has shown that there were significant elements of success in the polytechnics, but equally that there were failures in other respects. Few of the respondents interviewed for the study were prepared to offer an unequivocal answer to the question of whether the achievement of university status in 1992 represented a success or a failure of policy. The general view was the 'the jury is still out'.

## Successes

There is no doubt that in many ways the polytechnic experiment in England and Wales can be regarded as a success; this was recognized by the Secretary of State, John MacGregor in 1990 when he said to CDP that, 'Put simply, you are one of the country's major education success stories' (DES, 1990a). As Chapter 3 shows, the polytechnics made a substantial contribution to the central policy aim of expansion of higher education, though not as dramatically different from that of the universities, and the other colleges as may have been hoped. Some of the expansion came from amalgamations with colleges of education in the 1970s and from new designations after 1988. But by 1992, the polytechnics had helped to make possible mass higher education in Britain.

There was significant policy success in the polytechnics' maintainance of a comprehensive range of courses, as we saw in Chapter 4. They maintained the part-time route in higher education, after an initial decline in numbers. They were remarkably successful in expanding sandwich course provision, against the odds. They also expanded in business and social sciences, though the proportion of students on courses in engineering was halved over the period. They achieved a major shift towards degree courses and a substantial expansion at postgraduate level, though at the cost of stagnation of sub-degree work. Polytechnics increasingly became national institutions in terms of catchment of students.

The polytechnics maintained and developed the open tradition of the non-university sector and expanded access to new kinds of students. They were particularly successful in increasing numbers of women, students from ethnic minorities and mature students, though in this last respect less spectacularly than is often thought. They probably maintained greater access to students from working-class backgrounds, though less than might have been hoped. More than half of degree entrants had non-traditional qualifications. A higher proportion of their graduates than those from universities entered employment, particularly in engineering and manufacturing.

By 1992, the courses the polytechnics offered were quite different from those of the mid-1960s, so that their acquisition of university titles and degree-awarding powers was uncontroversial, by contrast with the resentment at their power even to run degree courses in the 1960s. The polytechnics established a wide range of subjects as areas appropriate for study in higher education, and new patterns of courses, and also made a substantial contribution to developing student-centred learning. They were distinctive in subjects of study, with large proportions of students in business studies and with the development of vocationally-oriented science and engineering degrees. The polytechnics maintained a tradition of responsiveness to the needs of industry, business and employers. They made claims for innovation, often with justice, sometimes exaggerated, but by 1992 they could claim to have redrawn the 'map of learning'.

The polytechnics demonstrated the benefits of diversity in course design and pedagogy for different students and purposes. They showed that many assumptions about the nature of higher education could be successfully challenged. The most innovative courses were those where polytechnics designed them from first principles, and innovation was encouraged when existing assumptions were questioned.

The challenge set in the 1960s for the polytechnics was to develop a form of higher education appropriate for a mass system at the end of the twentieth century. They made serious attempts to address the question set for them by Robinson (1968): 'What is a degree and what is it for?' They showed it was possible to offer higher education at much lower cost than previously, though at the price of penury. Their successes can be summarized thus: polytechnics offered different kinds of education to increasing numbers of different kinds of people in different ways.

## Failures

There are, however, significant ways in which the policy can be regarded as having failed. The polytechnics did, after all, become universities; in this sense the polytechnics were the most monumental example of 'academic drift' in British educational history. In terms of the 1965 binary policy they simply achieved the reverse of a central intention, falsifying the 'differentiation hypothesis'. However, the evidence suggests that they would have been unlikely to have become distinctive and to have achieved their successes if they had become universities in the 1970s.

The polytechnics could also be said to have fulfilled the worst fears of the conservatives and elitists of the 1960s. They came to offer higher education on the cheap, and worse still obliged the universities to follow suit. Have the polytechnics become degree factories and forced the universities to be so too?

The polytechnics did not resolve all the problems of mass higher education. The form of provision with which they became most associated, the modular course, arguably represented the triumph of the subject discipline. They faced growing problems of maintaining quality in an expanding system with diminishing resources; their staffs were stressed and treated less as professionals and more as employees in an increasingly managerial culture. Their responsiveness at times may have meant that the polytechnics were in danger of succumbing to instrumentalism and responding to ephemeral demands.

As we saw in Chapter 8, a major failure of the polytechnic policy was in governance. Whatever the justice of the case, the continuous wrangle between most of the polytechnics and their local authorities represented failure of this key element of the policy, and its resolution by incorporation diminished the distinction between the polytechnics and the universities. The problems of governance, more than anything else, led to the abolition of the binary policy.

Similarly, the funding of the polytechnics remained a continuing problem, though they were not unique in this. It is important to distinguish the problems of resources from those of funding mechanisms; many of the problems were those of financial constraint. But the variety of funding methodologies to which they were subject shows how the problem of funding mechanisms remained unsolved.

## Convergence

This study has shown that there are ways in which the polytechnic policy succeeded and failed. There is some truth in both conclusions, but neither wholly explains the outcome. The successes and failures together, however, resulted in a convergence of the two sectors of higher education, leading to the notion of 'blurring the boundaries' (Pratt, 1988) between the sectors. The polytechnics moved away from some of the purposes set for them, but the universities moved towards the polytechnics in significant respects. The polytechnics had a substantial effect on the university sector, leading to a breakdown of the traditional demarcation between vocational and academic courses that had characterized, albeit imperfectly, the two sectors. The universities increasingly acquired characteristics that had been traditionally those of the polytechnics, for example in developing modular courses and recruiting non-traditional students. The resulting 'unified' system cannot be wholly or accurately described in terms of either of the predecessor sectors. In this sense, the effect of the polytechnic experiment has been as great upon the university sector as within the polytechnic sector itself. My colleague Tyrrell Burgess asserts that allowing the polytechnics to call themselves universities conceals the fact that the universities had become polytechnics.

One need not go so far as this. But it is clear that the boundaries between the two sectors became increasingly blurred. The universities reluctantly at first and only when financial considerations obliged them to, began to acquire characteristics hitherto the prerogative of the polytechnics (and which they had previously eschewed). They increasingly emphasized the vocational relevance and content of their courses. They opened access to non-traditional students. They began to welcome and rapidly increased the recruitment of part-time students. They turned increasingly to applied research. They began to reduce their unit costs and to develop courses and teaching along lines pioneered by the polytechnics.

These developments were recognized, even by government, some time before the polytechnics acquired university titles. The 1987 White Paper said that it was 'misleading to imply a fundamental divide between universities and other institutions also providing higher education and also heavily dependent on public funds' (DES, 1987a). As Pratt (1988) concluded, 'the map of post school education is being redrawn . . .' Britain was not alone in this development. OECD (1991) recorded that the universities in OECD countries showed 'increased vocationalisation' and a 'recent tendency to assume a growing number of functions which were orginally perceived as specific, sometimes exclusive' to the non-university sector, 'thus leading to a blurring of the boundaries between the two sectors'. In Australia as in Britain, the blurring led to the amalgamation of the two sectors, though most other countries retained the differentiation of sectors, and at least two in Europe (Austria and Finland) recently decided to create a non-university sector.

## Sustainability of a binary system

This convergence of sectors, taken to the extreme in Britain and Australia and widespread elsewhere, raises the question of the stability of binary systems in higher education. Is convergence, and eventually unification, inevitable? What are the lessons of the British experience? The question raises issues of the nature of policy and its implementation.

There are different ways in which such a question can be addressed. Policy analysts define policy in different ways, and amongst the key features are that it is purposive, but also involves action and resources (Hogwood and Gunn, 1984). Of course, policy is not always explicit and sometimes resides in inaction. But even inaction, simply allowing events to happen, amounts to policy, or at least can be regarded as such. In all policy there is an implicit hypothesis of the kind: if we do this, then that will happen. Even doing nothing entails such a hypothesis.

Policy is a social artefact, in the sense that it is a device to achieve particular purposes, or as an attempt to solve particular problems, or to achieve some change in a state of affairs, and even if the intent is absent it can be so regarded (Pratt, 1989b). Like all devices, physical or social, the consequences of its operation depend on a variety of factors. One of these is the way in which it was constructed. Thus, one of the questions that can be asked of the polytechnic policy is whether there were design problems built into it from the start.

### *Design problems*

Were there elements of the polytechnic policy that meant it would lead to university status for the polytechnics? Fowler (1982) was convinced that the binary system was not sustainable. He argued that 'the central problem lies in the very phrase, "the public sector of higher education"'. It suggested that there were distinct sectors 'with distinct purposes, served by different methods of funding and control'. Yet, he went on, the division between the universities and the other institutions in England and Wales did not correspond to any such categorization. The universities had vocationally-oriented courses, whilst most fine arts ('which must be accounted the least vocational of all courses') were mostly in polytechnics. The diversifying colleges of education were also 'among the least vocational institutions' in the system. Fowler concluded: 'We must . . . ask whether it makes sense in the long run to maintain separate *sectors* of higher education. . .'

Fowler's argument was that the binary system was unstable because of the absence of a functional distinction between the institutions. This suggests something of a paradox. Unlike most other countries, Britain had a 'true' binary system, in that the polytechnics offered courses and qualifications that were meant to be distinct from but comparable in standard to those in universities up to doctoral level.

Most other countries followed one of two other models. The 'multipurpose' model (OECD, 1991) was typified by the North American systems where community colleges offered vocational courses and qualifications and an increasing amount of continuing education alongside programmes for the first two years only of a four-year degree. In continental Europe most countries had a 'specialist' model of institutions offering shorter, mostly vocationally-oriented courses in a limited range of subjects, leading to qualifications below first degree level.

The in-built comparability meant that the British polytechnics were from the start more like universities than most of their counterparts in other countries. Many of the battles that were already lost or were still being fought in other countries had already been won in Britain. The polytechnics awarded degrees with the same titles as those in universities; in many countries, it was possible only to get a diploma from a polytechnic. In Britain, there was little dispute over the comparability of standards between university degrees and those of the CNAA; in some countries the non-university sector was constitutionally part of the secondary education system, not higher education.

Not only could the British polytechnics claim comparability of standards at first degree level, they also had comparable postgraduate work to that in universities. The polytechnics were able, through CNAA, to offer Masters and PhD programmes. Some indeed had been doing this since the beginning of the century, through association with universities. In most other countries, the idea of Masters or doctoral studies at non-university institutions was anathema. In many, there was heated dispute over whether graduates from polytechnics could even enter postgraduate courses in universities, or at least without further studies to bring them up to the theoretical standards of university graduates (for example in Austria [OECD, 1995]).

This had two main implications. It meant that the polytechnic sector could genuinely claim comparability with the university sector in terms of the levels of its academic programmes. But it also meant that the distinction between the two sectors was that much less. It made it more likely that the polytechnics could become universities. The polytechnics needed postgraduate work to demonstrate their academic standing and to avoid permanent academic subordination to the universities, but it made them less distinguishable from the universities. Without postgraduate work there could not be a genuine binary system; with it, the binary system was likely to collapse.

Similar arguments applied to the development of research in the polytechnics. The polytechnics were seen as predominantly teaching institutions at the outset. Their funding mechanisms reflected this. From the early 1980s funding was based on the costs of offering student places. But there were pressures to develop research, if only as the necessary investigative underpinning of the taught programmes. CNAA validations of courses required staff to demonstrate that they were up to date with investigative work in their subject areas. In 1974 the CNAA Rochester Report had indicated the resources needed for research in polytechnics and in 1984 CNAA issued a policy statement updating this. The Council considered that research was one of the 'essential elements in the academic health of institutions' and institutions were expected to continue its development to support CNAA courses (CNAA, 1984b). The higher the academic level of the awards, the more a research underpinning was needed. But the more research the polytechnics did, the more like universities they appeared.

At the same time, the financial pressure on the universities was leading to increasing selectivity in the allocation of research funds to them. Although overall the universities had received about 30 per cent more funding than the polytechnics because of their research, successive research assessment exercises by the University Grants Committee and the Universities Funding Council meant that some departments received relatively little of the universities' research funds. So the difference between them and some of their comparator (or competitor) departments in polytechnics diminished. Again, the problem was in-built.

The similarities between the sectors were strengthened as the government increased the pressures on higher education to more directly serve the needs of the economy and industry. As in many other countries, the government increasingly targeted the core funding for institutions, usually through student number-based formulae, and increasingly distinguished funding for research from that for teaching and sought more explicit statements of the outcomes of research funding. A greater emphasis was placed on 'applied research' and the share of universities' income from external sponsors for contract research has increased, again diminishing the distinction between the kinds of research in universities and polytechnics.

A final factor that contributed to the demise of the polytechnic policy was the name of the institutions. Despite exhortations such as that of the junior minister in 1990 'not to be discouraged by "obsolete prejudice" which sees them as second-rate to universities' (DES, 1990c), they were disadvantaged, as the minister went on to acknowledge, by perceptions of parents, students and schools. He could have added employers, too, as the research by Roizen and Jepson (1985), cited in Chapter 3 showed. Polytechnic directors themselves felt disadvantaged in international comparisons, where the title 'polytechnic' was not understood and was often assumed, because of the status of non-university institutions in other countries, to exclude degree level and particularly postgraduate work.

The issue of title was often conflated with that of degree-awarding powers; universities had these, polytechnics did not. From their inception, polytechnics were unhappy about their incapacity to award their own degrees and sought chartered status like that of most UK universities. As early as 1970, the Committee of Directors of Polytechnics agreed that 'self validation was a worthy aim' and hoped that it would be achieved within three to five years (CDP, 1970). Robinson (1968), too, had hoped that 'the leading polytechnics' would award their own degrees within a decade, but assumed they would retain their name. The elision of the problems of title and of self-validation increased the instability of a binary policy.

## *The logic of the situation*

To the inherent problems of sustaining a binary policy were added those that emerged as the polytechnics developed. Their development was shaped by the opportunities and constraints of the situation in which they were placed.

Whilst the polytechnics responded to these factors, their development, in turn, altered both their situation and that of the universities. The more they developed as self-confident alternatives to universities, the more they could aspire to the title and status. At the same time, their development affected the universities and blurred the boundaries between the sectors.

The tendency to convergence was evident in a study by Tight (1988b) which showed that using cluster analysis of a range of measures of institutional character, such as numbers and kinds of students and courses, and income, for universities, polytechnics and colleges, it was possible to identify institutional groups which overlapped, crossing the sectors: 'these three basic institutional types may be by no means as distinct as is often assumed'.

The emergence of a system of mass higher education in Britain made the sectoral distinctions increasingly irrelevant in a number of ways. First, in responding to the demand for increased student places (and to the financial incentives in the system), the polytechnic sector rapidly became the larger sector of higher education. It was simply too big to dismiss; it was, numerically, the dominant model. As the universities, latterly, began to respond to the imperatives of policy and funding to expand again, they increasingly had to address the problems that the polytechnics had faced, of the nature of higher education in a mass system. They began to embrace more widely the solutions characteristic of the polytechnics, such as modularization. Because of demographic changes and the growth of the polytechnic sector, to increase student numbers universities had to increase access to non-traditional students, particularly mature students. The polytechnics began to cope with teaching in large groups, which they had earlier eschewed. The movement towards mass higher education in Britain tended to diminish the distinctions between the institutions.

This was reinforced by the government's increasing concern to make higher education more relevant to the needs of the economy, which were noted in Chapter 7. Concerns such as these had prompted the establishment of the polytechnics, but were now being urged on both sectors of higher education. The increasingly instrumentalist view of the whole of higher education meant that the distinction between the sectors diminished. It became possible to talk of 'vocational drift' by the universities as much as 'academic drift' by the polytechnics.

One aspect of this convergence between the sectors was in the growing importance of continuing, post-experience education in both sectors. This was a response to the demand to offer higher education relevant to the needs of the economy and also a reflection of the 'diploma disease' and the subsequent need for individuals to equip themselves with marketable skills to distinguish them from the much greater number of graduates. For the polytechnics, this form of education was a natural extension of the tradition of vocational and professional relevance and of responsiveness. For the universities it was an extension of their initially greater postgraduate sector. Both sectors developed, particularly in taught Masters courses and short vocational courses. As noted in Chapter 3 skills updating became an acceptable arena for both sectors. At the postgraduate level, the 'obsolete prejudices' of students and others were less evident than at undergraduate. Universities frequently accepted polytechnic graduates on Masters courses, and university graduates readily entered appropriate polytechnic courses, a process rather patronizingly called 'reverse transfer' by OECD (1991). The sectors increasingly converged at this level.

In the past, the universities had generally been reluctant to respond to instrumentalist pressures. Indeed, the polytechnic policy (and its predecessor for the CATs) had in part been prompted by the perceived unwillingness or inability of the universities to respond to demands for more vocationally-oriented higher education. This time, however, a number of other factors prompted a more visible response.

One of these was the greater central direction of the universities, initially through the University Grants Committee (UGC), later through the Universities Funding Council (UFC). These bodies became increasingly (and self-admittedly) *dirigiste*. The process could be seen most evidently in the 1981 allocation by the UGC, which involved marked differentials in the funding of universities. Later, partly in response to increasing calls for greater 'transparency' in funding mechanisms, and in parallel with the development of the NAB funding methodology in the public sector, the UGC and UFC started to make clear the basis on which funds were allocated to universities subject by subject. The change was described by the then Chairman of the UGC. Until the end of the 1960s, he said, the task of the UGC was 'to preside benevolently over the Robbins-inspired growth of the university system' (Swinnerton-Dyer, 1985). The task in the mid-1980s was 'to persuade the system into a more efficient and economical shape'. The UGC would have to 'apply whatever pressure may be needed'.

The increased central direction of the universities meant that one of the arguments for the polytechnic policy was partially undermined. There was now a visible element of 'social control' being exercised upon the university system. True, it was not through democratically elected local authorities as in the polytechnic sector, but it was a form of social control none the less.

There were other, constitutional, factors which generated convergence in governance and management. The problem of governance was one of both design and the logic of the situation. The Weaver solution, whilst a worthy attempt to balance the conflicting interests of the institutions and their maintaining authorities, was inadequate to cope with the demands of either. There were particular weaknesses in the way that the articles of government allowed the LEAs to retain control over detail of polytechnic budgets. LEAs equally had grounds for feeling a loss of ownership and control of 'their' institutions. As polytechnics developed, and some LEAs responded by increased interference, it soon became impossible to resolve the situation by incremental change. Although there were alternative models, of the 'aided' polytechnics in Inner London, and of 'hybrid' voluntary sector colleges of education, these were not considered as options at the initiation of the polytechnic policy. Both offered an independent legal existence for the institution and a more rational function for the local authority. They were not, of course, without their problems either, as Chapter 8 showed, but the evidence was that they offered a clearer and more workable distinction between the functions of both institutions and authorities (NAB, 1987b; Pratt and Silverman, 1988). But by the time reforms of governance along these lines were widely advocated in the late 1980s, positions became so entrenched that these alternatives were not seen by government as plausible, and other exogenous factors helped to make the situation one in which the 'sudden spasm' of the 1988 Education Reform Act was inevitable. Incorporation was the only policy space available.

## *Self-immolation*

A driving force of the polytechnic policy was the need to offer higher education more cheaply. The 1966 aims for expansion were allied to proposals to concentrate resources and to achieve economies of scale. From an early stage, the AFE Pool monitored student : staff ratios and other efficiency indicators, and continuing financial constraint increased the pressure on polytechnics to be more efficient. In the 1980s, the opportunity for the polytechnics to distinguish themselves from the universities arose when the latter opted for maintenance of the unit of resource by limiting growth, and the public sector continued to expand with diminishing units of resource. Despite their continuing complaints, the polytechnics maintained this policy, as their responses to NAB planning exercises and PCFC bidding showed, and much of the reduction in the unit of resource was through their own actions by recruitment of fee-only students. They continued by arguing for a method of funding in the unified system which would reward 'efficient' institutions. The policy was clearly successful in that the polytechnics were widely praised by the government for their reduction in unit costs and exhorted to exploit their competitive position (DES, 1990a). The balance of public spending on higher education shifted to the non-university sector. But the achievement was at a price. It may have brought acclaim; it may have brought independence from LEAs; it may have brought university titles. But it also brought penury, and little financial benefit accrued when the polytechnics acquired university status. It could be said that the polytechnics became universities by crucifying themselves financially.

One of the persistent themes in the history of the polytechnics was the idea of 'maturity'. This reinforced the in-built imperatives for self-validation noted above. It was envisaged by Robinson (1968) that polytechnics would 'develop' into degree-awarding institutions; the influential HMI Report (1990b) spoke of institutions being 'sufficiently mature' to have greater powers in validation, and the Bird Report (Bird and Callaghan, 1990) employed 'evolutionary' terms. The metaphor of maturity was used extensively, and usually, unthinkingly in debate. Yet it was of limited validity and it had equivocal consequences.

For one thing, some of the institutions which became polytechnics were already 'mature'. They had histories of up to, and in some cases more than, a century. Many had been offering degree and even doctoral studies for much of this time, albeit under university control, and some in London were able to award 'internal' rather than external degrees. All the polytechnics were subject to academic validation by CNAA, and were seen, as that very terminology reflects, as academically subordinate. Universities, by contrast, validated their own courses and awarded their own degrees. Indeed, the 'new' universities of the 1950s and 1960s had these powers from their establishment (unlike the newer civic universities before them which were initially colleges of existing universities). Yet the new universities had none of the experience of the new polytechnics.

It was not surprising that in these circumstances, CNAA was seen as a kind of controlling body, ensuring standards in institutions which otherwise were not capable of sustaining them. This view was explicit in the Robbins Report's (1963) recommendation to set up CNAA. It spoke of university institutions giving 'important assistance in establishing standards' in the non-university colleges and 'helping the colleges in their academic progress,' thus reflecting the maturity metaphor and the academic snobbery of the time. But CNAA need not have been viewed like that. Robinson (1968) presented a vision of the polytechnics as colleges of a national university. CNAA would perform the function of giving a national currency to locally created, taught and examined awards, in a way loosely similar to the function of the University of London and its colleges. But the myth of maturity prevented the development of that vision.

One consequence of this was that both the polytechnics and CNAA fell victim to the metaphor. Polytechnics seemed, at times, to see CNAA as the enemy, frustrating their legitimate aspirations, not a collegium in which they were the most significant members. So too did CNAA accept the metaphor, referring explicitly to institutional maturity and devising a model of institutional progression from course-by-course validation, through partnership, to accreditation. In this process it brought about its own demise. Progession, of its nature, did not conveniently stop at accreditation. Nor, ironically, did the attainment by the polytechnics of the ultimate 'maturity' of university status free them from academic controls. They became subject to the scrutiny of HEQC's quality audit, and of the funding council's assessment of teaching quality and its research assessment exercises.

## Governmental learning

When the polytechnic policy was established, little attention was paid to the instruments of policy available to the government to ensure its successful implementation. Pratt and Burgess (1974) commented on the failure to develop an educational plan and to use administrative and financial mechanisms. The major instrument used was the inadequate reform of governance. The history of the polytechnics offered an important lesson for government: the increasing realization of the power it could exercise through various instruments of policy, particularly control of resources. By 1992, it was clear that government had learnt the lesson. Its funding agencies exercised greater, more detailed and more directed control over the polytechnics (and the universities) than ever before. The process had started when NAB was eventually established to address the long-felt need for control over the development of the sector, and the government was able to direct the polytechnics and other institutions towards particular kinds of provision and to increase efficiency. The approach was further developed through the use of funding agencies such as PCFC and HEFCE. Ostensibly established to avoid direct government control of institutions, these bodies were nevertheless subject to guidance from the Secretary of State and exercised different but as detailed and arguably more control over polytechnics than ever they suffered under local authorities. Becher and Kogan (1992) have described the move away from the 'centre' to the 'periphery' in higher education that has happened as a result of this. For the polytechnics the experience was summed up by Gould (1994): 'liberation is not freedom'.

Similar learning by government was visible in the way in which it insisted on the introduction of appraisal schemes for staff in the newly incorporated institutions, holding back funds for salary increases until these were agreed.

As noted in Chapter 7, these developments reflected wider societal changes. In the 1980s the government explicitly moved to relate higher education more directly to economic, industrial and social needs, as part of a programme of reform of the whole public sector along consumerist lines. The welfare state shifted, as Scott (1995) describes it, to a contractual rather than fiduciary state, exemplified by the 'contracts' between the funding councils and institutions, and it became more concerned to audit outputs than to plan and provide inputs. The 'contractual state' and the 'audit society' are themselves components or manifestations of the 'tertiary' welfare state emerging as the dominant form of political organization at the end of the twentieth century. For the polytechnics, its emergence meant greater obeisance to government policy since financial resources were increasingly related to its demands. The government had learnt, as it were, how to make higher education run on time.

## *Extraneous variables*

The discussion of the impact of the audit society on the development of the polytechnics illustrates the way in which they were subject to the effect of what might be called extraneous variables. As we have seen in Chapters 7 and 8, some of the factors precipitating major changes were unrelated to polytechnics *per se.* They were, for example, caught in the crossfire, as it were, of political disputes between central and local government. The Conservative government became evermore determined to curb the powers of the predominantly Labour local authorities. One characteristic dispute arose in 1981 when Labour took control of the Greater London Council with a manifesto commitment to heavily subsidized public transport (the 'Fares Fair' policy) and was prevented from implementing it through legal action by Conservative authorities. It may be too much to claim that the polytechnics' independence from local authority control owed as much to transport policy in London as it did to educational concerns, but factors such as these, and concerns to reform education more generally, combined in the late 1980s to make reform of the government of polytechnics inevitable.

The financial constraint from the mid-1970s onwards was also a major factor affecting the way in which polytechnics developed. It is possible to speculate that, in a more prosperous economy, there would have been less governmental admiration for cheaper alternatives to the traditional and more prestigious universities. Financial crises can be regarded as ideologically constructed; if the state or society wants to allocate funds, they can be found, as the establishment of the National Lottery has shown, weekly allocating prize money equivalent to the annual grant of a university. Alternatively, they can be seen as matters over which governments have at best limited control. In either case, the polytechnics were buffeted by factors over which they had no control. Similarly, the wider moves to consumerism in the public services generally affected the polytechnics directly. Again, without this social and political change, their development would have been different, and perhaps less valued.

## Lessons from history

What are the lessons from the experience of the polytechnics in England and Wales? What are the implications for the future development of higher education in Britain of this 25-year experiment? Does the history also offer insights for the successful development of polytechnic policy in other countries? The British experience suggests that there are two key sets of lessons: educational and organizational.

The development of the polytechnic sector in Britain relied, ultimately, on its educational philosophy. It would be true to say that many staff in polytechnics would have struggled to define this philosophy, and some may actually have been unsympathetic to it. But it was articulated by the key proponents of the polytechnic sector and was manifest in the regulations and practices of the CNAA and understood and enacted by the staff in the institutions. The most important statement of the philosophy was that by Robinson (1968) in his book, *The New Polytechnics*. It formulated key questions about the nature of mass higher education and these are as valid now as when they were written.

For Britain with its new 'unified' system of higher education, there is general concern to maintain 'diversity' of provision. The 1991 White Paper (DES, 1991) recorded the government's recognition of the 'importance of maintaining the general diversity of the various institutions' in the two sectors. Demonstrating its learning from the past, it followed this with the proposal that funding arrangements would be related to the 'distinctive missions of individual institutions'. It spoke of the need in particular to maintain and extend the polytechnics' and colleges' emphasis on vocational studies and widening access, though it made no proposals as to how. The government's view was broadly accepted by the sector as a whole, with the Committee of Vice-Chancellors and Principals establishing a working group on diversity in 1995.

The history of the polytechnics offers lessons for the maintenance of diversity. It shows the importance of a coherent view of the nature of higher education; a distinctive educational philosophy was a necessary condition for the success of the polytechnics in securing recognition of their distinctive form of higher education. To maintain diversity in a unified sector requires continuing consideration by institutions of the nature of vocational and professional education at the turn of the twenty-first century. There is a need for an intellectual framework within which courses and curricula are designed. Of importance will be the issue about which Robinson (1968) was concerned: the dominance of academic subjects. There are a number of features of the 'new' universities, particularly their commitment to modular courses, which combine with developing ideas of a 'credit culture' (HEQC, 1994) and of a 'learning bank' (Robertson, 1995) which imply a fragmentation of the student experience and, almost inadvertently, promote the academic subject as the key element in curricular design. The central element of modular courses and a credit culture is the unit of study rather than the student experience. The student 'consumes' units usually designed according to the canons of the subject discipline. Choice resides only in the assembly of these units.

The polytechnics showed that there are different approaches on which new thinking can be based. There are lessons, in particular, from the development (and decline) of independent study about the empowerment of students, the role that they can take in developing their own educational programmes and in maintaining coherence and progression that address some of the central problems of a credit culture. The development of learning contracts and learning profiles owes much to the pioneering work in independent study. Other approaches include basing programmes on the cluster of skills, abilities and knowledge that are used by practitioners in a profession (as done for engineering by Markkula, 1988), or more generally for adult life. The polytechnics' experience shows that considering what students might need after their higher education tends to produce different answers to the question of course design from those traditionally generated. The experience of National Vocational Qualifications, however, offers a dreadful warning of the way in which specific occupational needs can easily become mechanical, complex and static. Another approach lies in the idea of the 'reflective practitioner' (Schön, 1983), concerned with generic capabilities, and which was employed in courses in the polytechnic sector.

The experience in polytechnics with modular courses also offers the possibility of breaking down the increasingly irrelevant distinction between full- and part-time courses. It is already possible to combine modules on a basis suitable to the time available to the student for study, though at undergraduate level the system of student support still relies on the full-/part-time distinction.

The successful development of the polytechnic policy depended on the creation of self-confident and self-actuating academic staff. To have an independent educational identity, not subordinate to the universities, staff needed to be capable of initiating change and innovation in response to changing circumstances. The demands on staff in the new universities to continually consider new approaches will be heavy, and point to a need not only for staff development but reconsideration of the nature of the academic (and non-academic) professions. Although market forces can promote innovation, it is hard to see how the circumstances of the harassed lecturers of the 1990s will enhance their capacity for this. The polytechnics were able to make the innovative changes that they did in a time of relative prosperity, certainly by comparison with their later circumstances. In a mass system of higher education, with high student : staff ratios, the demands of teaching, guiding and assessing students, to say nothing of coping with the administrative horrors of complex modular courses and the increased demands to perform creditably in research, all diminish the time and energy available for creative thought and academic development. One of the possible lessons of the polytechnics' history is that, overall, originality in course development diminished with declining resources (though the converse is not necessarily true). Part of the solution to this may lie in reconsidering the balance between academic and non-academic work; perhaps more of the tasks currently the domain of academics should be undertaken by non-academic staff. The polytechnic inheritance of administrative dependence on local authorities means that they have some way to go to develop professional administrations able to cope with these demands.

One of the strengths of the polytechnic policy was the way in which the CNAA system permitted more than one approach to the curriculum. In a diverse system, different institutions may aim to serve different clienteles in different ways, producing expert practitioners, or emphasizing the importance of a combination of skills and knowledge. It is sensible for different approaches to be developed and tried, and the outcomes monitored. The polytechnic experience showed that a variety of courses was possible within strict standards. One question which arises now is whether the existing and proposed arrangements for quality assurance in the unified system promote the development of innovative and diverse courses. The present system of academic audit and quality assessment tends to promote uniformity and works on assumptions of continuous minor improvement rather than requiring the intellectual justification – and hence occasionally promoting the idiosyncratic, innovative or divergent – that the CNAA system did, for all its other faults.

The CNAA also served further functions for the polytechnics that the present arrangements do not. It helped to make the polytechnic philosophy more widely known. It was a national body representing and promoting a separate sector. In this sense, a binary system is easier to promote than a diverse one. The polytechnics, too, through the Committee of Directors of Polytechnics, were able to act as advocates for their sector. The CNAA system also promoted the involvement of junior staff in course development.

The history of the polytechnics shows the importance of a national representative body such as CDP acting as the collective voice of the sector. CDP was never a powerful body, and its record reveals that it was often victim to internecine dispute. The polytechnic directors were usually forceful characters and disagreed on many topics. CDP was also modestly staffed and financed; only at the end of the polytechnic era was it able to establish a substantial secretariat with a chief executive with experience of government. CDP minutes reveal that it was often at the periphery of government debate (and frustrated to be so). At times it was passive, perhaps most strikingly when it decided to leave the next move in the development of partnership in validation to CNAA (see Chapter 6). But CDP was a tireless advocate of a polytechnic philosophy and of the sector, and it was central in the negotiations about the nature and funding of the unified sector in the 1990s.

The development of an educational philosophy was not, as this history has shown, a sufficient condition for the maintenance of diversity in higher education. Even when a distinctive philosophy was articulated, there were many pressures towards uniformity. For the unified system, Brown's (1971) observation that 'in an unequal system the deprived tend to formulate their goals in terms of the favoured' remains as true now as it did for the polytechnics. The task of maintaining diversity is as ambitious as that of maintaining the binary policy in 1965 – it involves reversing at least 25 years of educational history of convergence, just as the 1965 policy attempted to reverse the history of the preceding century. The lesson of the polytechnic experiment is that organizational matters need to be addressed to maintain diversity.

The central organizational problem for the polytechnics was that of governance. As statutory corporations, many of their historic problems have disappeared. But other, new challenges face them. The task of governance is vast; the responsibilities and liabilities of few, unpaid members are substantial. The development of the contractual state has increased the burdens of governing bodies. The problems of the new universities are but an example of the growing problem of the governance of the agencies of the devolved state. Their problems, in turn, are transmitted down inside the institutions, in the form of managerialism. Mass higher education has, arguably, made managerialism inevitable, and it may be time to consider new structures of both governance and management to address the conflicting demands of the academic community and the wider society. The benefits and drawbacks of experience elsewhere may need further consideration. The 'contractual state' has already blurred the boundaries of the public and private sectors. This is not to argue for a repeat of the 1980s presumption of 'private good, public bad' (Pratt, 1989c). Indeed there is valuable experience more closely related to the circumstances of the polytechnics in the voluntary sector – but features of all sectors may be needed in universities in the future.

One of the problems for the new universities is that the traditional universities still maintain their differential of esteem, and this is organizationally reinforced through funding (for example of research). The logic of the situation tempts the former polytechnics to emulate them, not to differentiate themselves. The universities have their historic advantage in research funding reflected in ratings in research assessment exercises, and historic advantages in capital provision. With time, some of these differences may diminish. There will soon be a generation unaware of the 'less noble' (OECD, 1991) polytechnic origin of the 'new' universities. In funds for teaching, though historic differentials in average units of resource remain, they are less clearly associated with ex-polytechnic status (Knight, 1996). The research differentials may take longer to diminish, even if this is the will of government; as it was unprepared to act significantly at the start of the unified system, the most opportune time to redress imbalances, it is unlikely to do so in future. Arguments by a sub-sector of the system will carry even less weight than when the polytechnics were a separate sector.

Yet even without additional resources there are measures that the government could consider. One factor promoting convergence lies in the selective allocation of research funds from the funding councils. The impact of this methodology has been to encourage dispersion of research; most polytechnics aspire to a research culture to gain additional resources. There is no countervailing mechanism in the funding councils to encourage concentration on teaching. An institution cannot freely choose to concentrate on teaching, for this simply eliminates a potential source of funds. This is not to argue for selectivity in teaching funds, but unless an institution overall receives equal reward for teaching or research, it will opt for the more remunerative activity.

There is some experience in the polytechnics' history to draw on here, though limited and not wholly encouraging. They experienced a variety of funding mechanisms with different incentives. The PCFC bidding system, for example, offered a way of rewarding institutions wishing to expand numbers, though it had many other drawbacks. PCFC also attempted, though again largely unsuccessfully, to relate funding to institutions' strategic plans. This is the most obvious solution to the problem of relating funding to mission. Both the institutions through CDP and the funding councils have previously rejected the approach, on the grounds of the administrative burden – the English funding council has over 100 institutions to deal with – and that the method would place excessive power in the hands of the funding councils. Pratt and Locke (1994), however, showed that such a system was feasible, particularly if developed on a rolling five-year basis, and that other elements of existing funding mechanisms could be built into it.

The problem of differentials of esteem is also evident in the tendency to stratification of institutions, even within the unified system. In the binary system, the experience of the polytechnic was that it was impossible to sustain the ideal of 'different from but equal to' the universities. In the end, equivalence was attained only by identity in title and autonomy. Similarly, the emergence of a 'third division' of colleges of higher education after the reorganization of colleges of education in the 1970s and their aspirations to polytechnic status point to the persistence of hierarchical ambition. For the future, the obvious possibility is of stratification within the unified system. Formal arrangements of this kind were proposed and rejected in the 1980s (ABRC, 1987). The 'R-X-T' model proposed a system of institutions with predominant concerns as research universities (R), teaching universities (T) or a combination (X). Whilst few expect a formal stratification of this kind, an informal one is easily possible, and may even exist. The selective allocation of research funds has already identified a dozen or so R-type institutions and a larger number of T-type institutions – the former polytechnics. The room for manoeuvre is already effectively limited to the attainment of X characteristics by former polytechnics. Further informal stratification is seen in the publication of various kinds of league tables, widely held to affect the esteem and marketability of institutions, not least in the overseas student market. Since the tabulations generally compile data on the traditional status characteristics of 'old' universities (such as A level grades on entry and research ratings), the former polytechnics generally appear at the bottom. The polytechnics may simply have exchanged a class hierarchy for a meritocratic one.

This kind of stratification suggests that the British system might be seen as moving towards the North American model, and there are temptations to predict its future by comparison with the USA. There are further parallels in the way in which the 1992 Further and Higher Education Act created a sector of further education institutions independent of local authorities, which could be seen as counterparts to the American community colleges. The emergence of a credit culture enhances the similarities. Robertson's (HEQC, 1994) Report invites such a comparison, and argues for a greater market element in Britain as offering greater access.

The parallels may not be apt. For one thing, Robertson, like most commentators, overlooks the difference in years of schooling between the USA and Britain. Most entrants to higher education from school in the UK have two more years' education than their American counterparts. On this basis, the American universities are less 'mass' than at first sight and the arguments about access less convincing.

A further difference between the North American and British systems, illustrated by the history of the polytechnics, is the way in which the stratification of the former system is apparently more settled and accepted. In the much cited Californian model, California State University appears not to aspire to the status of the University of California, nor do the community colleges to university status, in the way that the British polytechnics and colleges sought elevation in their hierarchy (OECD, 1990). There is already an indication of ambition amongst the subordinate institutions of the 'new' binary system created by the 1992 Act – the further education colleges. The Act subjected those with higher education work to the academic hegemony of the degree-awarding universities. Stratification of the unified system may come – indeed may have done so already – in Britain, but the lesson of history is that it will bring instability.

There are perhaps closer parallels with the developments in Australia, which like Britain has recently abolished a binary system. The Australian system also operates with funding through a student contribution scheme, which is widely canvassed as a model for the UK. There are again differences. In Australia the 'new' universities were created by a variety of means, not just by a change of name and granting of degree-awarding powers to existing institutions. There were in particular amalgamations of colleges of advanced education, some with each other and others with existing universities. In Britain, attempts to bridge the binary divide, at Teesside Polytechnic where a university college was to be founded with Durham University, and at North Staffordshire, where a merger with Keele University was discussed, were both unsuccessful – the latter when the Polytechnic showed the confidence to reject a takeover by the smaller university. (The only 'trans-binary' merger was in Northern Ireland when the University of Ulster was created from Ulster Polytechnic and the New University of Ulster.)

Nor are all the lessons from Australia encouraging. The process of amalgamation in particular appears to have caused major disruption and distress (Teather, 1990; Mahony, 1996). But in a state of financial constraint, British institutions may consider or be forced into amalgamations. After all, the location of universities is now more than ever a matter of historical accident, and a parsimonious government could easily ask why there are three universities in a city like Birmingham; there has also been a long-standing concern about alleged over-provision of higher education in London. One consequence of the unification of the system in 1992 could be amalgamation of institutions in 2002.

## Lessons for other countries

Whilst the American model may not be that for the future in Britain, the British experience may have some relevance for other countries which have binary or polytechnic policies.

Drawing lessons from experience in other countries is always difficult and may be dangerous. The situation when countries have initiated policies for non-university sectors has sometimes been very different from Britain in the 1960s. Although many countries developed these policies at around this time, the circumstances were different. The more recent developments, such as Finland and Austria in the 1990s, are also set in a different era, economically, socially, educationally and politically.

Educational traditions differ. Higher education in Britain has followed the 'Anglo-Saxon model', with degree courses lasting three or four years, leading to a bachelors qualification. Britain's main vocational colleges were not, as in many countries, part of the secondary education system, but a separate sector. It was possible in Britain to get a university degree in a technical college. British universities are not state institutions in the sense that many European universities are, and have had substantial managerial and financial responsibility.

In the European 'Humboldtian' model, the universities generally have unchallenged status. Their courses have been long, with students taking six years or even a decade to graduate; there is often a right of access to all matriculates, generating high drop-out subsequently. Paradoxically, the universities have had little managerial or administrative responsibility, though individual staff, at any rate the professors, have considerable personal autonomy, often protected by a state constitution.

In Europe, there were no true 'binary' systems. The problems of expansion and over-crowding of the universities, of their theoretical rather than vocational emphasis, and of the desire to 'democratize' higher education, similar to those in Britain leading to the polytechnic policy, have been variously addressed by the development of short-cycle 'efficient' higher education, at a level below the universities, as in the IUTs in France and in more polytechnic-like institutions such as Fachhochschulen in Germany and more recently in Austria. All these institutions have explicit subordination to the universities, not least in their exclusion from doctoral studies.

However, in any country the case for a binary policy rests, as it did in Britain, on the idea that the non-university sector should offer a different kind of education from the universities, particularly in its vocational emphasis. The lesson from the polytechnics of the need for a coherent view of the nature of this education is important for other countries. In countries where higher vocational education was an extension of secondary education, for example Austria, this requirement has presented substantial challenges, because there is little experience at the level of higher education on which to build.

Different countries or institutions within them may emphasize different aims, but there is a felt need in many countries for a wider education than is currently offered in vocational institutes. British experience through CNAA showed a way of permitting variety within strict standards yet with a national currency. A CNAA on the British lines is not the only model for this, but the lesson is that there is benefit in any country from the creation of a peer group organization which can enhance and support the development of innovative courses.

In most countries seeking to develop non-university sectors, there is a problem of convincing the various relevant publics of the value of the sector. Polytechnics, as we saw, suffered from problems of esteem of students, parents and employers, and these problems are still encountered in countries such as Finland (Goedegebuure *et al.*, 1994). A peer group organization (like CNAA) can help to make a polytechnic philosophy more widely known. The institutions can also facilitate this through a national body representing them. In Britain, the Committee of Directors of Polytechnics was such a body, though not as effective as it might have been.

The question of research in non-university institutions generates strong views in most countries. British experience may be limited here, since the context is significant, but this history suggests that there should be research in non-university institutions, though there should be differentiation of emphasis from that in universities. The critical argument is that those teaching future professionals cannot do so without reflecting on the implications of professional and educational practices. Moreover, they need experience and understanding of current developments in theory and practice. The graduates, too, need to have a firm understanding of investigative methods appropriate to their future careers. Most non-university institutions also have an important task of offering advisory and consultancy services to firms of all sizes. This activity is itself investigative; much research arises in this way. Staff need research skills to undertake this task and they (and students) can further develop these skills by doing it.

The British experience of research in polytechnics was not an entirely happy one. Institutions often actively discouraged or even prevented staff from undertaking research, in part to concentrate on the development of new courses and as a positive attempt to recognize the teaching and course development skills that the universities had tended to neglect in favour of research. Where research did develop, it often did so despite rather than because of the system.

A significant problem in Britain, which still remains, was the recognition and funding of research that does not conform to existing paradigms of academic research. The polytechnics repeatedly complained that the kind of research that they undertook was not recognized or supported by the Research Councils, and the polytechnics' share of Research Council funds was tiny. In other countries, where the universities have a near monopoly of research, the problems are magnified.

The polytechnics differed from similar institutions in most other countries in that they had the capacity to offer doctoral studies from the start, validated by the CNAA. This strengthened their academic integrity, and avoided their being ultimately subordinate to the universities. In many countries there has been heated debate on this topic, and about the relationship between graduates from non-university institutions and doctoral studies at university. The universities often do not accept that a non-university graduate should or would be able to enter doctoral studies directly. British experience tends not to support this view; polytechnic graduates frequently undertook doctoral studies in universities. It is, of course, unacceptable and undesirable to force what are ultimately academic decisions on universities, but if any country is to develop a self-confident, independent non-university sector, this issue is central.

The establishment of the polytechnics in Britain initiated an extraordinary period of course development. This placed considerable demands on their staff. The experience showed that successful development of the polytechnic policy depended in the long term on the creation of self-confident academic staff. The creation of new curricula requires considerable support for staff development, for achievements need to be recognized in the institutions and nationally and, of course, resources are needed both generally and for staff development.

One danger is that staff development is seen mainly in terms of theoretical knowledge. The tendency, as in Finland (Goedegebuure *et al.*, 1994), is to regard staff in vocational institutions as needing higher academic qualifications so that they are comparable with university teachers. In Britain, there was a steady increase in the percentage of polytechnic staff with doctorates. But a vocationally-oriented higher education must acknowledge the importance of practice in the curriculum. This implies that professional expertise is at least as important as academic qualifications and puts a case for the employment of practitioners as teachers.

One of the most difficult problems the British polytechnics faced was their relationship with local education authorities. The unhappy experience of polytechnic governance offers warnings of difficulties for other countries. It suggests that there must be an effective separation of the responsibilities of the institution and maintaining body, whether central, regional or local government or even private company. There must be clear understanding of who owns the budget. The polytechnic experience shows the need for institutional freedom over the management of the budget once allocated, with power to carry over spending into the next financial year and of virement between heads of expenditure. At the same time, it is important for the maintaining authority to have a sense of identity with the institution and for the partners represented on its governing body to have a sense of 'ownership' of its policies. The experience of the British polytechnics after they became independent of the local authorities in 1989 suggests involvement in drawing up strategic plans offers a way of engaging the various stakeholders in institutional development. The emerging practice in the 'new' universities of seeing the governing body as a partnership of differing interests means using the expertise of members for the development of the institution to mutual benefit. They have particular types of expertise, which inform the institution and its management, in particular in the development of its strategic plan.

Amongst the lessons of the British experience is the difficulty of devising funding methodologies that meet the many conflicting demands placed on higher education. The experience was that funding mechanisms are always complicated and can encourage unexpected responses by institutions.

Institutions, naturally, tend to react to funding mechanisms in ways that maximize their income, and this 'game-playing' can frustrate or negate educational objectives.

One aspect of the success of the British polytechnics was that they did achieve objectives of 'comprehensiveness' particularly in relation to subjects of study. They had a wide range of disciplines, covering not just technology and science, but also social sciences, business, and the humanities. In many countries, non-university institutions are often more narrowly based. The British experience suggests that institutions on more 'polytechnic' lines offer opportunities for cross-fertilization of ideas, economies of scale, an adequate resource base for the offering of advisory and consultancy services by the institutions, and the potential for developing a coherent and confident sector of non-university education.

British experience suggests a final long-term lesson. Governments of other countries with binary systems will need to consider whether it is the long-term intention to maintain a binary policy, with different institutions serving different functions, or if they expect that their country will repeat the British experience of convergence of the sectors. They will need to ask whether one of these outcomes will be regarded as success and the other as failure. As we have seen, in Britain the answer is still uncertain.

## The future

The Further and Higher Education Act of 1992 marked more than the end of a quarter century of 'experiment' with the binary and polytechnic policies. It also marked, in a way that the binary policy had attempted to do, the end of a hundred years of educational history. From now on, there was to be a unified system of higher education in England and Wales (and the United Kingdom). The higher education system was now, to all intents and purposes, the university system. But the Act also marked the beginning of a new era. British higher education finally became a mass system. Although it was synonymous with university education, the kind of higher education offered was different from that of any previous period and was offered to more and different kinds of people. One is tempted to say, like A.J.P. Taylor of the nation in 1945, that the system had finally 'come of age' (Taylor, 1965). It had begun to address the problems of offering a higher education appropriate to meet the needs of a mass audience at the end of the twentieth century. How far this will be successful remains to be seen; there are many challenges to face.

The system emerging in Britain is one in which mass higher education is no longer an autonomous domain, nor restricted to the academy. The rise of the 'contractual state' has required higher education institutions to account for their activities in ways that historically were anathema, whilst many of the activities traditionally restricted to higher education take place elsewhere; there is more research in industry than in universities. The development of work-based learning challenges the monopoly of traditional institutions: much learning takes place outside the academy, particularly the reflective learning of professionals, which advances both the application of knowledge and the development of new knowledge. These are manifestations of a 'knowledge society' (Hagstrom, 1994) in which the functions of the university must be different from those in the past. As HEFCE (1995) has recognized, 'higher education institutions are not uniquely placed to provide HE level work'. At the same time, as Williams and Fry (1994) have shown, higher education must serve a very wide spectrum of interests.

The increased pressure on higher education to serve societal ends is also a challenge. As the then Minister for Science and Education in Sweden put it, universities have a 'double role' both as 'the executor of important duties that are decided by every country's government and parliament' and as 'a seat of free and critical exploration' (Unckel, 1994). This challenge has been recognized in Britain, too. HEFCE's response to the review of higher education initiated in 1995 spoke of higher education having

> an important role to maintain and communicate the values of a pluralist society, . . . its role is to question, criticise and advance those values within a changing social, cultural and economic environment . . . it can legitimately claim to be concerned not only with the interests of society today but also the needs of society in the future, and can justify its actions and decisions on these grounds. To this extent, it is answerable not only to the Government, but also to a longer term interest.

These are ambitious aims and universities will need defending to sustain them. As the new university sector moves towards the twenty-first century, it is beginning a new experiment in higher education in Britain, guided by the experience, successes and failures of the polytechnic experiment.

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# The Polytechnic Experiment
## 1965–1992

In 1965, the British government astonished the academic world by announcing that it proposed to create a sector of higher education different from but equal in status to the traditional universities. Thirty polytechnics were formed over the next few years from existing technical colleges and other institutions in England and Wales to head this new sector. In 1992, the then thirty-four polytechnics and other major colleges acquired university titles, and the polytechnic experiment can be seen as coming to an end. The development of the polytechnics was always controversial and a topic of interest in both Britain and other countries. Until now there has been no complete account of the polytechnic 'experiment'. This book attempts to compile a full record of the changing policy aims, the nature of the students and staff in the polytechnics, the distinctive courses they developed and the ways in which they were governed and funded. It asks how far did the polytechnics fulfil the aims set for them in the 1960s and what are the lessons for the future of higher education both in Britain and other countries with plural systems?

- The first full history of the polytechnics
- An analysis of the polytechnics' aims and achievements
- An exploration of the lessons for future higher education policy

This is essential reading for senior managers in all forms of post-school education and for students and scholars of higher education policy.

**John Pratt** is Professor and Head of the Centre for Institutional Studies at the University of East London. He has researched into higher education for more than twenty-five years. He has undertaken a number of studies for the Organization of Economic Cooperation and Development (OECD), and has been a consultant to the governments of Austria and Finland on polytechnic policy.

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